THE DOCK & HARBOUR AUTHORITY

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Editorial.

The Port of Cavalla.

The Port of Cavalla, which is situated in the Northern Aegean Sea, east of Salonica, is noteworthy as a tobacco exporting centre, but it has been found in recent years that the facilities in the port are inadequate to cope with the trade, and enlargements and improvements which have been under consideration for some considerable time past are now in course of progress and are expected to be completed in 1935.

The construction of the new harbour at Cavalla is being undertaken in two sections, the first of which, involving an expenditure of 70 million drachmas, includes the construction of a breakwater 700 metres long, increasing the depth of water to 9 metres, and the construction of 300 metres of quayage in the interior of the harbour.

The second section, which is to be undertaken when the first is completed, involves an expenditure of 80 million drachmas and includes the construction of a jetty 220 metres long and the construction of a further 600 metres of quayage in deeper water.

Imports of goods at Cavalla in 1929 reached about 100,000 tons, while exports totalled about 30,000 tons, 50 per cent. of which comprised tobacco, the chief export of this port. As recently as 1924, Cavalla was the chief tobacco exporting port amongst the North Aegean harbours, as in this year Cavalla exported nearly 12,000 tons of tobacco as against just over 3,000 tons from Salonica, and even though in 1929 Cavalla's export of tobacco had increased to 16,000 tons, Salonica's has also shown a tremendous increase as the figures for the latter port were over 12,000 tons. These figures show that the tobacco export trade is greatly increasing, and it is therefore only to be expected that if the Port of Cavalla is brought up-to-date and proper facilities exist, their tobacco export trade will still greatly advance.

The Port of Cavalla is the subject of this month's Supplement and an illustrated article appears on another page.

Ribble Dock Undertaking.

Preston has become a very important petrol distribution centre in the North of England. In fact it is the fifth largest port for petrol distribution in the kingdom. Eight years ago, the petrol dealt with during a period of 12 months was 3,661 tons. In one period of 7 days quite recently, 13,276 tons of spirit were landed, a weight representing very little short of 4,000,000 gallons. These figures made new records for the port. However, they do not indicate anything like the full storage capacity of the 36 tanks now in existence on Preston Docks for they are capable of carrying a load of 10½ million gallons, or 35,000 tons. In eight years the import of petrol has increased by nearly 40 times the volume dealt with in the year 1923, when the trade first began to assume a degree of real commercial importance. For the 12 months ending March this year, 144,499 tons were landed, or approximately 333,000,000 gallons. From the viewpoint of the Corporation which controls the Ribble Dock Estate, the petrol trade is by far the most profitable section of the dock undertaking. With constantly-increasing accommodation for storage, bigger ships are making the journey with loads and one week quite recently three large ocean-going steamers brought in 3,276, 4,300 and 3,000 tons respectively. The largest of this trio had a registered tonnage of 4,045, was 415-ft. in length and 58-ft. beam. When an oil vessel berths, her fires are drawn immediately, and the power for pumping the oil into the tanks comes from a steam boiler situated well away from the ship and tanks. Even after the ship is unloaded, special watch is kept on her right to the time she puts to sea again. Supervision and precautions against fire are comprehensive and thorough.

Chittagong as First-class Port.

Situated about ten miles from the mouth of the Karnafuli river, Chittagong was regarded as a centre of trade as early as the 16th century when the Portugese, who frequented it, gave it the name of Porto Grande. But it was not until the Assam-Bengal Railway was completed that its claim to be the natural outlet for the trade of Assam and north-eastern Bengal was generally recognised.

Chittagong was formerly declared a major port in 1928, when its administration was transferred from the Government of Bengal to the Government of India.

The Trust at present consists of twelve Commissioners, the Chairman and one Commissioner being appointed by the Governor-General in Council. The other Commissioners include the District Collector and representatives of various other interests, such as the A.B. Railway, the local Chamber of Commerce, the Indian Merchants' Association and the municipality.

The chief exports are tea, jute, rice, paddy and cotton, and imports piecegoods, salt, oil, machinery, etc.

The draught of shipping using the port, said Mr. Rattray, is governed by the conditions obtaining at the three bars, outer, inner and Gupta crossing, which lie in the lower reach of the river. Prior to 1928 the governing depth over the bars limited draught generally to from 19 to 20-ft., the lesser draught applying in the cold weather season—November to February.

In consequence of the trade of Chittagong showing a distinct tendency to increase subsequent to the war, the Government of India recognised the necessity of improving the port, and in 1925 guaranteed a loan of Rs.50 lakhs to the Port Commissioners for the purpose of carrying out river improvement works.

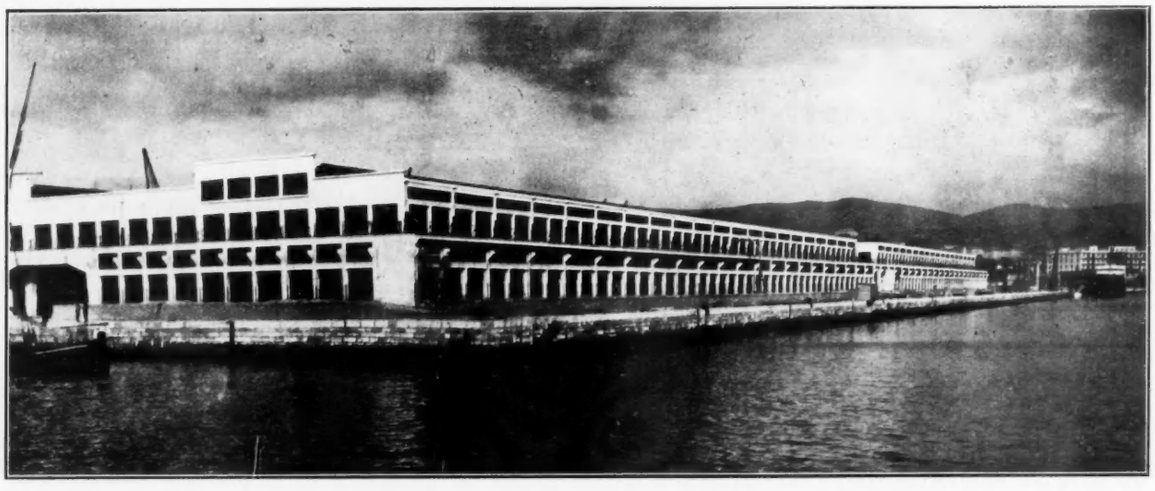
The Port Commissioners thereupon had a modern type 2,000-ton suction hopper dredger constructed which was placed in commission during 1928, superseding the old 750-ton suction dredger which had been found incapable of providing sufficient depth over the bars. The effect of the new dredger has been to improve the depth over the bars by about 3-ft., in consequence of which draughts ranging from 22-ft. to 25-ft. can ordinarily be dealt with during the year.

As has been mentioned, the lesser draught limit applies during the cold weather season, and in order to improve this the Port Commissioners will shortly be considering a scheme for lighting the river with a view to instituting night pilotage, as the night tides are higher than the day tides at this period of the year and night pilotage would enable vessels drawing 23-ft. 6-in. to be dealt with. In addition to the above, the Port Commissioners have embarked on a comprehensive scheme of river improvement works consisting of revetments and training walls. An additional three miles of river bank will have been revetted during the three years ending 1931, resulting in the stabilization of the river banks and channels at critical sections, and enabling dredging to be carried out with greater effect.

Preliminary investigation work is being carried out in connection with a proposed scheme for constructing a training wall across the upper end of the south entrance to the river, the ultimate object of which is to divert all the river discharge, utilizing the south channel into the north channel, in order to eliminate the inner bar and to effect improvement of the outer bar. Depending on the amount of the estimates framed as a result of the investigations now in progress, the Government of India will be asked to sanction either a full or a partial training wall scheme.

The aim of the Chittagong Port Commissioners is to provide for vessels having draught up to 27-ft., which at the present time represents the maximum required for vessels engaged in the eastern trade likely to use the port, and which would definitely establish Chittagong as a first-class port.

Italian Harbour Affairs



New Warehouses in the Free Port of Trieste.

ACCORDING to statistics which have just been published, shipping at Italian ports during the first quarter of 1931 was as follows:—

	ARRIVALS			CLEARANCES		
1931	No.	N.R.T.	Goods	No.	N.R.T.	Goods
March ...	14,974	6,784,536	2,186,198	14,819	6,591,386	642,881
February ...	12,370	5,715,000	1,796,000	12,383	5,821,000	573,000
January ...	13,686	6,118,000	1,826,000	13,743	6,188,000	606,000
	40,970	18,617,536	5,808,198	40,945	18,600,386	1,821,881
1930						
January-March	52,476	18,674,043	6,822,030	52,359	18,663,688	2,264,192

While the tonnage of ships arrived and cleared shows a slight decrease, the depression is more noticeable in the volume of trade carried. Imports show a decline of 18 per cent., while exports show a decrease of 25 per cent. In connection with the goods traffic it should be noted that imports during the first quarter of 1929 reached 6,417,631 tons against 6,327,490 tons during the corresponding period of 1928, and exports 2,141,784 tons compared with 2,008,147 tons. What the future prospects are it is difficult to say, since the development of shipping is strictly connected with the economic crisis. It is certain that as soon as the output shows an increase things will also improve with shipping and ports. In the meantime, particularly at Genoa, shipping quarters are studying the opportunity of further reductions of tariffs in order to facilitate transit trade, and it would appear that special railway charges are to be adopted in connection with the goods shipped from certain Italian railway stations to the warehouses of Molo Caracciolo at Genoa which are assigned to the export trade.

In the meantime the various works that the different Italian ports are undertaking are showing increasing progress. At Genoa the construction of the Vittorio Emanuele Dock and of the Benito Mussolini Dock with about 4,500 metres of breakwaters and 5,000 metres of quayage at a cost of about 500 million lire has made considerable progress. It is announced that the Consorzio Autonomo del Porto has decided to inaugurate during 1931 the whole maritime passenger station on the Ponte dei Mille in the old Dock.

The same thing may be said about the works being undertaken at Trieste, where the construction of a 100,000 tons grain silo has been decided, and the construction of the new electric cranes of Demag patent on the new warehouses is making considerable progress. When all the work in hand at Trieste is completed the port will provide 15,000 metres of quayage, of which about 5,000 metres will have a depth of about 12 metres.

The question of grain silos has also been considered by the Naples harbour authorities, and it is understood that it has been decided to enlarge the capacity of the present silos. The whole

Exterior View of the completed Maritime Passenger Station at Trieste.

Italian Harbour Affairs—continued.

programme of harbour improvements at Naples involves an expenditure of 250 million lire.

At Leghorn a new interior port is being built in the Marzocco district, with 1,800 metres of quayage, having a depth of over 10 metres, and 1,300 metres of quayage with a depth of 7 metres. This new port will give 120 hectares of land, which will be sold or rented to new industries desiring to establish themselves at Leghorn, and the Government has granted special fiscal exemption for the purpose of encouraging the exploitation of this zone. The cost of the first portion of the works which are about to be completed reaches about 90 million lire.

Things are also improving at Palermo, where the construction of a large breakwater at the entrance to the port is showing good progress, and about 2,000 metres of new quayage are contemplated at a total cost of 175 million lire.

No less interest is being shown by smaller Sicilian ports in order to increase their facilities, and the Eastern mole at Catania is to be enlarged by 600 metres, while an additional 1,500 metres of quayage are being built. Regarding the increasing facilities at Cagliari (Sardinia), quayage is also to be increased there.

However, where the Italian Government seems to devote considerable attention is to the construction of ports in the various colonies. At Rhodes a new dock is to be built to enable large ships to enter the harbour. A new quay of 1,500 metres is to be built and funds for this purpose have not been asked for from Rome, but have been provided from the revenue of the Island itself.

The question of the construction of the port of Bengasi (Cirenaica) is being followed with interest in Italian shipping quarters, as it is felt that when the new works are completed it will be possible to increase shipping with the ports of Cirenaica. The original project which had been mapped out for the port of Bengasi has been transformed by the S.I.C.A.M. It has been decided to start the construction of the breakwater, about 2,000 metres long, from the mainland instead of from the sea. The new port of Bengasi will have a water area of 170,000 square metres with an entrance 280 metres wide. Since the depth will reach 14 metres it is evident that large liners will be able to anchor safely. The construction of new jetties and quays is now being considered.

The increasing traffic at Tripoli (Lybia) has rendered necessary the construction of a new jetty measuring 100 metres in length and 15 metres in breadth, and the construction of a new airport for the service from Tripoli to Rome.

The olive oil trade has made Imperia (Oneglia) a rather interesting shipping centre, and the volume of goods handled at that port reaches nearly 200,000 tons yearly. Since, owing to the olive oil exports, many regular steamship services are calling at this port it has become rather difficult to handle this business owing to the lack of mechanical unloading facilities and to the small depth of water. The Consiglio Provinciale deli'Economia (Chamber of Commerce and Industry) of Imperia has worked out a project for harbour enlargements at Imperia, including the construction of quayage to a length of 1,000 metres, the construction of railways connecting the port to the line from Genoa to Ventimiglia, and finally the construction of some electric cranes.

The question of Italian harbour policy has been considered in a lecture delivered recently at Genoa. Several people insist upon the idea that smaller ports should also be helped, and, as a matter of fact, in the course of the past few years attention has been paid to the possibility of developing shipping at Ravenna, Ortona a Mare, Crotone, Licata, Porto Empedocle, Trapani, Civitavecchia, Cagliari, etc. Others think that efforts should be confined to the largest ports, as even if shipping at Italian ports should double from the present level, there would never be sufficient trade to enable many ports to exist.

The problem of the competition of foreign ports is being followed with interest. The future of Trieste would not be influenced by the Austro-German Zollverein, since as long as German and Austrian merchants obtain advantageous rates at Trieste they will use this port. On the other hand the question of competition between Genoa and Marseilles is being considered, and in this connection Genoa still maintains its position as chief port of the Mediterranean, as is shown by the following figures:—

	Marseilles (Total Goods Imported and Exported) Tons	Genoa Tons
1924	7,151,901	7,435,094
1925	7,414,600	8,248,830
1926	6,650,000	7,581,301
1927	7,589,154	7,750,739
1928	7,085,734	8,672,832
1929	7,286,737	8,418,325
1930	7,305,158	7,650,000

The free zone regime in the port of Fiume expires on December 31st, 1931. It is not known whether this regime is to be extended or not for another two years. Much will depend upon the relations between Italy and the countries of the former Austro-Hungarian Government, while in many Fiume shipping quarters it is emphasized that if the free zone should be extended for a longer period, things would improve, especially if the privilege of the free zone be extended also to the tobacco trade.

New Caterpillar Mounting

For Ruston-Bucyrus Excavator

Messrs. Ruston-Bucyrus, Ltd., the well-known excavator manufacturers of Lincoln, have just devised a new Caterpillar Mounting for their No. 4 Universal half-yard excavator, and this represents the last word in mountings for excavators because of its simplicity, accessibility, efficiency and reliability.

Its chief features are: (1) The "single shaft" drive; (2) The final chain drive; and (3) A heavy cast steel framing.

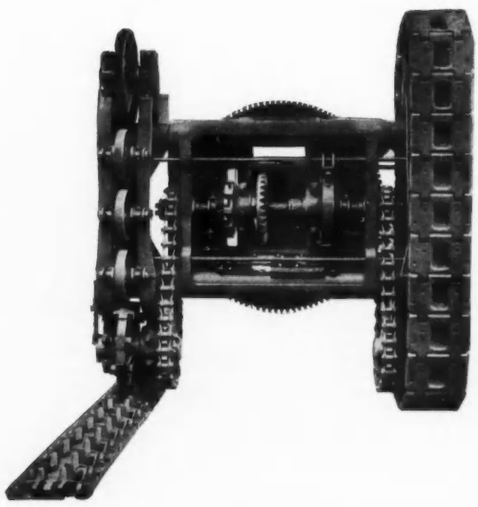


Fig. 1.

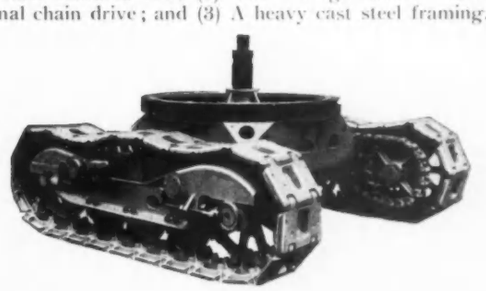
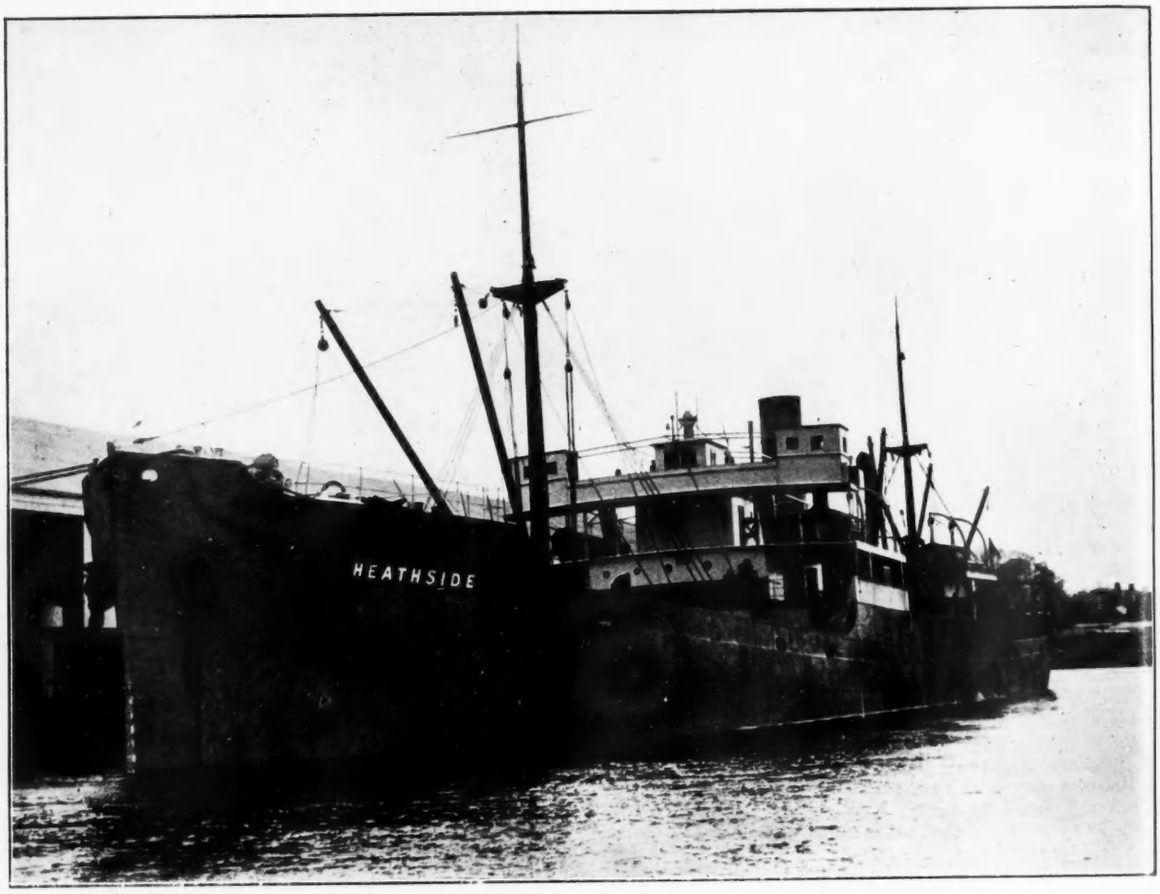


Fig. 2.

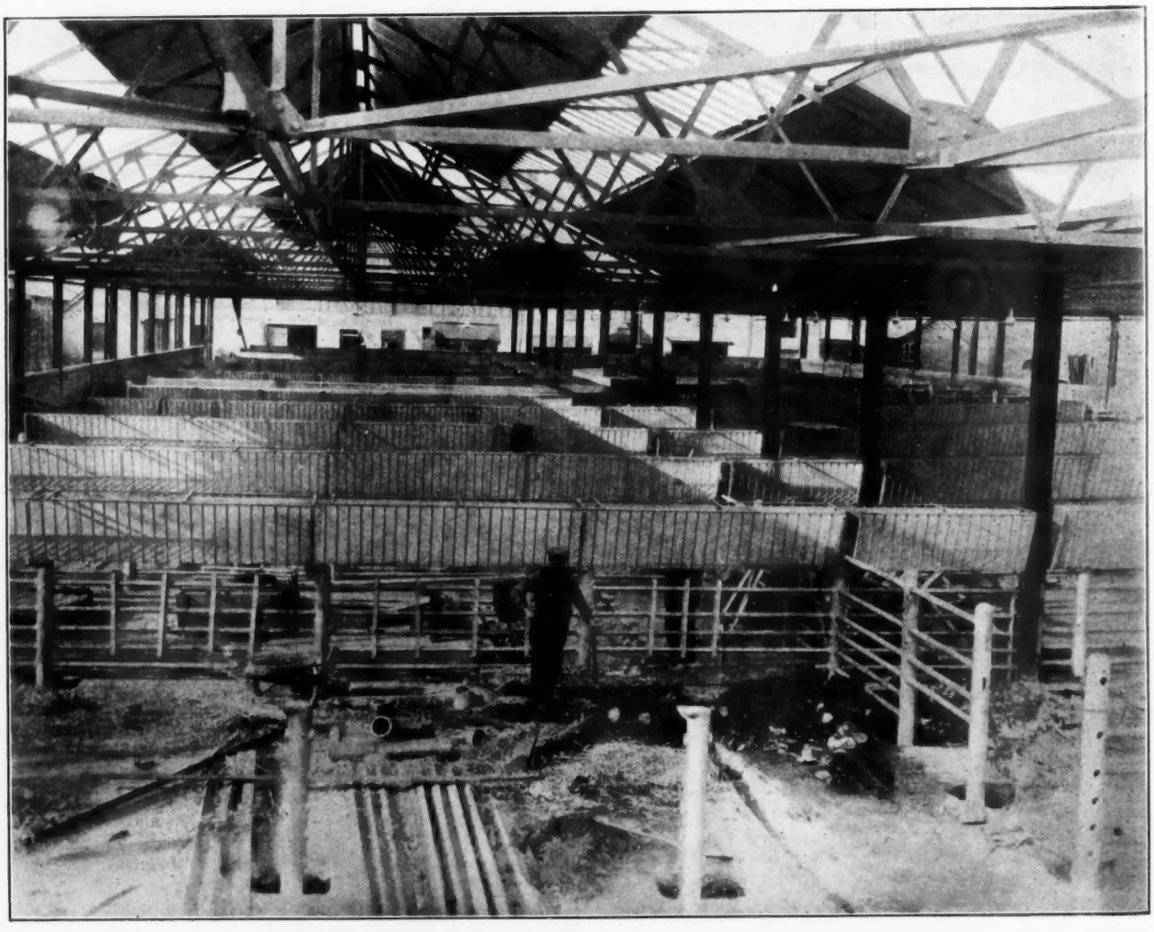
The accompanying illustrations give some idea of the advantages of this new caterpillar mounting. Figure 1 shows the underside view of caterpillar assembly and illustrates its unique simplicity and accessibility. Figure 2 shows lower frame assembly illustrating accessibility of sprocket chain and split sprocket wheel.

Messrs. Ruston-Bucyrus will be pleased to send particulars of this new caterpillar mounting which is described in circular R.B.1073 to any of our readers who are interested.

The Port of Londonderry



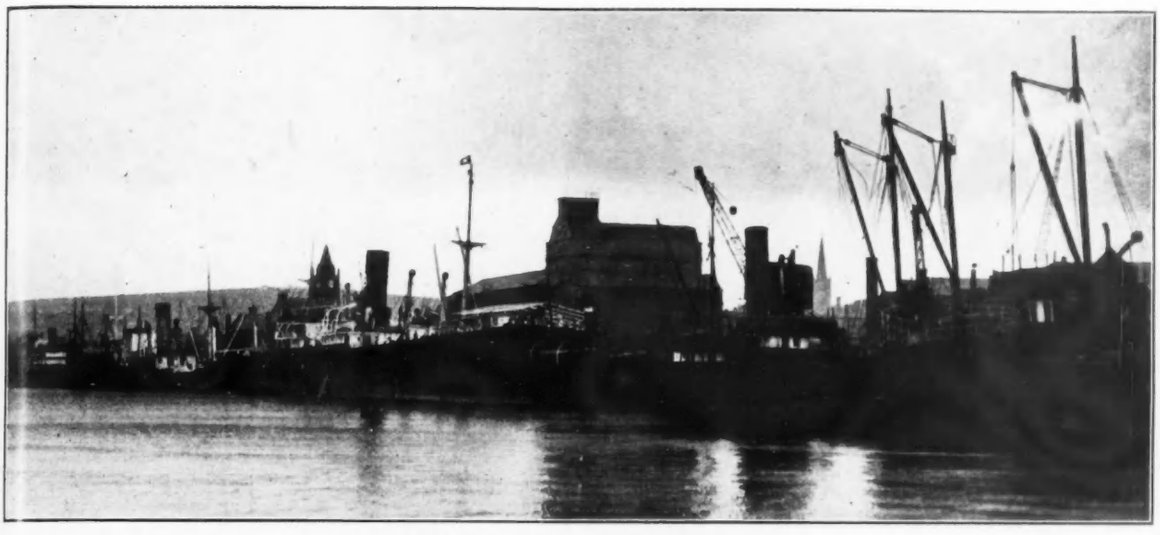
Grain Vessel discharging at Queen's Quay Extension.



Cattle Pens at Londonderry in course of Reconstruction.

The Port of Londonderry

Improvements carried out in 1930



General View of Queen's Quay, Londonderry.

AN extension of the Queen's Quay to the northward has been carried out in reinforced concrete on the Hennebique system. It consists of a wharf 400-ft. long and 45-ft. wide—the portion between the new wharf and the existing pitched embankment being filled in with hard, dry filling, finished on top after consolidation with stone pitching and road metalling.

The cross section of the wharf consists of a framework of reinforced concrete piles, four to each bay, strongly connected together by cross braces and diagonals. The bays are spaced eleven feet apart, centre to centre, longitudinally. Every third bay is further strengthened by having two front piles instead of one, both being enclosed in reinforced concrete cylinder work, 4-ft. 6-in. in diameter, filled in solid with mass concrete.

The wharf is tied together in the direction of its length by reinforced concrete beams and walers.

The deck structure consists of cross beams and longitudinal beams of reinforced concrete, carrying a reinforced concrete decking, which, in turn, is covered by a surfacing of ordinary concrete roughened on top.

Close sheet piling of reinforced concrete has been driven along the line of the back piles of the wharf for its full length, and returned at the north end in to the existing pitching. This sheet piling is surmounted by a reinforced concrete curtain wall carried up to deck level of wharf. The piling and wall retain the filling behind wharf.

The whole wharf is tied back to the solid ground by steel tie-rods, at suitable intervals, to large anchor blocks of existing embankment.

The decking is designed to carry a distributed load of 5-cwt. per square foot and a rolling load of 3 tons per wheel.

Mooring pawls and bollards have been provided in suitable positions, also iron ladders at intervals along the front.

The face of the reinforced concrete structure is protected by pitch pine fender piles and walers, and by elm rubbing pieces from the chafing effect of vessels moored alongside.

The design is in accordance with the most recent reinforced concrete practice, and the materials and workmanship are of the highest class.

Dredging was carried out along the front of the wharf to provide a depth of 25-ft. at L.W.O.S.T.

The Engineer for the work was Mr. W. E. Huston, Assoc. M.Inst.C.E., Harbour Engineer, and the reinforcement was designed on the Hennebique system by Messrs. L. G. Mouchel and Partners, Ltd., Westminster. The contractors were Robert Colhoun, Limited, Londonderry.

A Transit Shed 300-ft. long and 50-ft. in width has also been erected on the new wharf. It is constructed of steel stanchions, roof trusses, purlins, etc., and is roofed with "Big Six" Cement-Asbestos corrugated roofing. Sliding doors are provided along the front, back and ends of Shed.

The portion of the shed which extends over the filled-in ground behind the new quay is floored with reinforced concrete.

Railway lines have been laid down outside the new shed connected with the Harbour Railway system.

The contractors for this shed were Messrs. A. and J. Main and Co., Ltd., Glasgow.

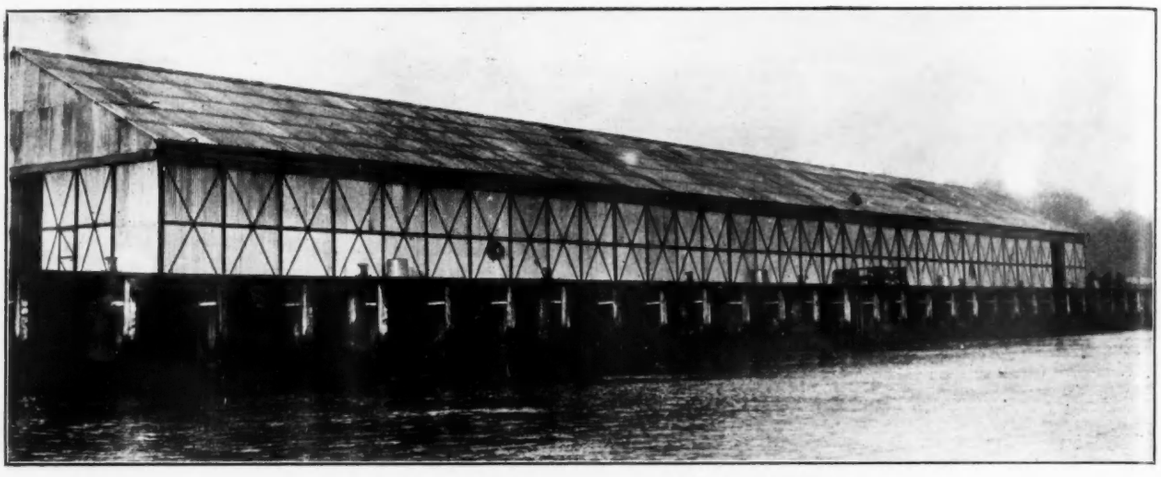
A further contract was carried out by Robert Colhoun, Ltd., for the re-construction, in reinforced concrete, of 100-ft. in length of the existing Queen's Quay Wharf, immediately south of the new extension. This section was 20-ft. 6-in. wide, and followed generally the design of the main extension, except as regards width.

A crane run has been provided and is in use on this section.

The total cost of the works is about £10,000.

Rock Jetty, Londonderry, showing 35-tons Steam Crane.

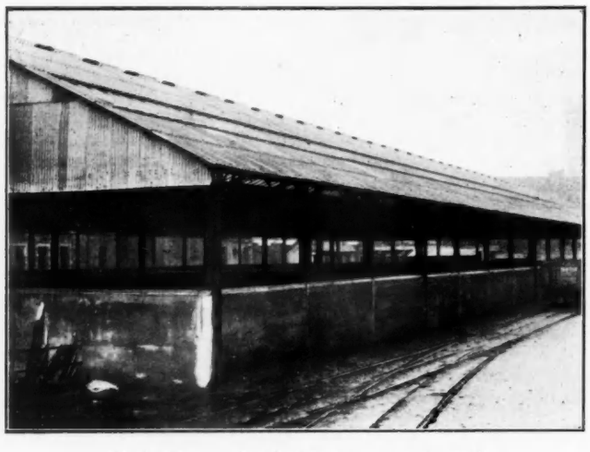
Port of Londonderry—continued



Queen's Quay Extension and New Shed, Londonderry.

Other Improvements.

The pens for the reception of cattle, sheep and pigs for inspection by the veterinary officers of the Ministry of Agriculture prior to shipment have been re-constructed and enlarged. The work has been carried out with galvanized cast iron pillars and steel tubing, and the pens have been completely roofed over. The roof is carried on steel stanchions, which support steel roof trusses, purlins and ties. The roof is of corrugated asbestos-cement sheets ("Big Six"), and roof lights are provided for the full length of the roof, the glass being "Georgian wired."



Cattle Pens at Londonderry, as reconstructed.

The pens are completely enclosed by a reinforced concrete wall, 6-ft. high, with gates where necessary, and are lighted at night by electric lamps of ample power, with suitable reflectors.

The veterinary inspection pens at the Port of Londonderry, for their size, are now the most modern of any port in Ireland.

An extension of the shed for the Customs and medical examination of passengers embarking and disembarking at Londonderry for American and Canadian Ports has been carried out. In addition to the extension, the shed has been fitted up with suitable rooms for medical examination, etc.

Customs Examination Shed for Trans-Atlantic Passengers.

The Rock Jetty, at which there is a 35-ton steam derrick crane, has been completely reconstructed in timber. It measures about 300-ft. long by 40-ft. wide.

Bremen's Seagoing Shipping Traffic in April, 1931

In Bremen's seagoing shipping traffic 722,105 net registered tons arrived. Thus the previous month was exceeded by 60,348 or 8 per cent. and April of the previous year by 14,709 net registered tons, or 2 per cent. This increase is chiefly due to the seasonal increase in despatching ships in the North America and Baltic Sea trade. During the past four months of the year tonnage arrived amounted to 2,685,496 net registered tons, equal to 182,496 net registered tons less than in the previous year. There was a renewed decrease in seaborne goods traffic of the five most important Weser ports in the month under review. Amount of goods imported, due to decrease in the import of grain, was only 233,400 tons. That is 37,800 tons or 14 per cent. less than in March. Compared with April of the previous year this is a decrease of 121,800 tons or almost one-third. Exports, with 163,000 tons, decreased by 2,900 tons as compared with March and by 15,700 tons, equal to 8 per cent., if compared with April of the previous year. The reason for this in the first place is the considerably decreased export of potash which amounted to 8,800 tons, instead of 27,000 tons in the months under comparison. Traffic in both directions together amounted to 396,400 tons or 40,700 tons less than in the previous month and 137,500 tons less than in April, 1930. In the first four months of the year 1,642,900 tons were imported and exported against 2,231,900 tons in the same period of the previous year. Thus the decrease amounted to 589,000 tons equal to 26 per cent. Of this, 438,600 tons were in imports and 150,400 tons in exports. These decreases are 30 per cent. and 20 per cent. respectively.

Caernarvon Harbour Trust

Caernarvon intends to erect a light on the Portdinorwic pier-head. A timing clock and meter will be installed in the pier-head office and it is estimated that with an annual consumption of electricity at eight hours lighting per day, the cost to the Harbour Trust will be £4 10s. Slates shipped from the port during March were 1,230 tons, an increase of 175 tons over the corresponding month of last year. During the first three months of the year 2,896 tons of slates were exported, as compared with 1,762 tons for the corresponding three months of last year.

Notes from Far Eastern Ports

Ceylon.

Port Trust for Colombo.

IT is understood that the special committee appointed by the Ceylon Government towards the end of last year to report on the proposal to establish a Port Trust for Colombo Harbour has concluded its labours and that its report is being drafted. It is learnt that the majority of the members of the committee are in favour of the creation of a Port Trust and that the Report will make the recommendation, while the minority composed of the Ceylonese members of the committee have put up a strong opposition to the proposal and are preparing dissent.

The question of a Port Trust for Colombo has been under consideration since 1911 during the McCallum-Clifford régime. In 1925 the late Sir Edwin Hayward, as Chairman of the Chamber of Commerce, strongly urged the adoption of the step. The Donoughmore Commissioners, however, made the recommendation that the Port Trust of Colombo should be placed under a Minister.

A Former Commission.

A Commission appointed by Sir Henry McCallum in 1912, with Sir Hugh Clifford as Chairman, recommended the creation of a Port Trust for Colombo. Sir Henry McCallum, however, disagreed with the recommendations made by the Commission and with the sanction of the Secretary of State for the Colonies established the present Port Commission.

As regards the revenue of the Trust the Clifford Commission proposed that it be derived from the following sources:—Harbour and tonnage dues, pilotage fees, patent slip and graving dock fees, warehouse rent, rents of land, buildings, basins, commission on coal salved, fees for using tugs and cranes, fines and penalties, etc. As regards the Ceylon Wharfage Company and other landing companies, the Commission were in favour of the continuance of their contracts, as the Commission felt that their continuance would not in any way interfere with the revenues or other interests of the Trust.

Among the other recommendations of the Commission were: (1) That the Trust or Authority should have power to appoint its own officers and to fix their salaries and conditions of service, subject to the approval of the Government. (2) That the Trust should frame its own Budget, its financial year being the same as that of the Government. (3) That the Trust be given grants-in-aid by the Government, and that, when the revenues of the Port increase, the grants-in-aid might cease altogether.

The Constitution.

The Clifford Commission recommended that the Trust be composed as follows:—(1) The Chairman, who should, in the first instance, be a Civil Servant of the First Class; (2) The Principal Collector of Customs, who should in the first instance be Vice-Chairman of the Trust; (3) The Director of Public Works; (4) The General Manager of Railways; (5) The Master Attendant; (6) The P.C.M.O. (now Director of Medical and Sanitary Services); (7) The Resident Engineer of the Port; (8) The Mayor of Colombo (all of these eight members to be nominated by the Governor); (9) Also six unofficial members, of whom five should be nominated by the Chamber of Commerce, and one by the Governor to represent Ceylonese interests.

The Constitution now recommended is bound to be different in view of the fact that Ceylonese trading and commercial interests have greatly developed since then. The members of the Committee appointed last year are:—Messrs. B. G. de Glanville (chairman), E. G. Adamaly, M. J. Cary, C. H. Z. Fernando, H. L. de Mel, S. H. Hayley, H. M. Macan Markar, A. R. Quarme, D. S. Senanayake, and A. F. Molamure.

Colombo Harbour Police.

Sub-Inspector Titcombe, of the Harbour Police, has been promoted to the rank of Inspector, and E.P.S. Whitfield, also of the Harbour Police, to the rank of Sub-Inspector. Both these officers are to be congratulated on the recognition by the higher officials of their services.

Madras.

Port Development at Cochin.

Preliminary designs and estimates for the fourth stage of the development of Cochin Harbour, consisting of railway approaches to the new land reclamation scheme, deep-water wharves, transit sheds, and warehouses, are now being made. The municipalities of Cochin and Mattancherri are considering the question of sanitation and improved water-supply.

The successful dredging in the harbour of the long approach channel, which was completed in March, 1929, was followed by two equally successful dredging operations after the monsoons of 1929 and 1930, when the silt accumulation for each year was cleared away in five weeks, without any interference with traffic.

As a result, the inner harbour has been constantly used by all vessels calling at the port since March, 1930.

Dredging within the harbour is proceeding, and it will shortly be possible for the largest passenger steamers to swing at a fixed mooring with a radius of 700-ft.

There are already eight buoys for mooring large ships, as well as anchorage space for smaller steamships and a special area for sailing craft. Notwithstanding the general depression, tonnage has increased, and the year just ended showed an increase on the estimated revenue, while savings were effected in the estimates for the harbour scheme.

Karachi.

Karachi's Foreign Trade.

The statistics of the foreign trade of the Port of Karachi for March show that the total value of imports (merchandise) amounted to Rs.1.71 crores, a decrease of Rs.44 lakhs, and that of exports to Rs.1.54 crores, a decrease of Rs.1.55 crores, as compared with the figures for March, 1930.

The progressive totals for the year ending March 31st, 1931, show a decrease of Rs.7 crores, or 2.6 per cent. under imports, and Rs.7.45 crores or 29 per cent. under exports.

The decrease under cotton manufactures occurred in receipts of white and coloured goods, which amounted to 13½ million yards valued at Rs.24 lakhs and 5 million yards valued at Rs.11 lakhs, as against 17½ million yards valued at Rs. 41 lakhs and 7 million yards valued at Rs.21 lakhs, respectively, in March, 1930. Imports of grey goods at 3 million yards valued at Rs.6 lakhs, however, showed an increase of 2½ million yards in quantity and Rs.4 lakhs in value, due chiefly to larger arivals of longcloth and shirtings from Japan. The total imports of cotton piecegoods during the official year 1930-31 amounted to 182½ million yards valued at Rs.4 crores, showing a decrease of 37 per cent. in quantity and 47 per cent. in value as compared with 1929-30.

Bombay.

Bombay's Foreign Trade.

The aggregate value of the foreign trade of Bombay, imports and exports, for the month of March amounted to Rs.10.14 crores, or 35 per cent. as compared with the figures for the corresponding month of the previous year. This is due to smaller arrivals of both merchandise and treasure and to reduced shipments of Indian and foreign produce. Exports of gold amounted to Rs.12.1 lakhs as against none in the month of March, 1930.

Imports of merchandise were valued at Rs.1.82 crores, showing a fall of Rs.2.84 crores, or nearly 34 per cent., due mainly to smaller arrivals of cotton piece-goods (36½ million yards and —Rs.89.6 lakhs), mineral oils (nearly 6½ million gallons and —Rs.30.82 lakhs), metals and ores (—Rs.30 lakhs), motor cars including motor wagons, cycles and parts (—Rs.14.55 lakhs), machinery and millworks (—Rs.11.66 lakhs), other manufactures of cotton (—Rs.10.63 lakhs), sugar (—5,380 tons and —Rs.9.96 lakhs), instruments and apparatus, etc. (—Rs.7.81 lakhs), silk, raw and manufactured (—Rs.7.76 lakhs) and cotton twist and yarn (—nearly ½-million lbs. and Rs.5.43 lakhs).

Total Import Duty of the Port of Bombay.

The total amount of imports duty collected at the Port of Bombay during March was Rs.7,434,108 (of which Rs.848,562 represented duty on articles of luxury) as against Rs.12,603,650 in March, 1930, and Rs.20,058,254 in February, 1931.

Exports of Indian produce were valued at Rs.4.69 crores as against Rs.6.51 crores in the same month last year, showing a decline of Rs.1.82 crores or 28 per cent., owing chiefly to smaller shipments of raw cotton (—1,430 tons and —Rs.1.52 crores), and hides and skins, raw and tanned (Rs.11.64 lakhs). Exports of gold amounted to Rs.12.1 lakhs as against none in March, 1930, while those of silver were insignificant. The re-exports of foreign merchandise receded by Rs.17.96 lakhs to Rs.14.19 lakhs.

Bengal.

Hooghly Lighting Scheme.

The enterprise of the Commissioners for the Port of Calcutta in lighting the river Hooghly between Garden Reach and Ulubaria has been justified by the experience of the s.s. "City of Exeter," which left Calcutta recently.

Notes from Far Eastern Ports—continued

Had this stretch of the river not been lighted, the vessel, carrying 200 passengers, would have left its loading berth in the King George's Dock at 1.30 a.m. and gone to Budge Budge on the flood tide, where she would have been moored for the night. In consequence she would not have crossed the James and Mary until about 1.10 p.m. the following day. However, in consequence of this stretch of the river having been lighted, the " City of Exeter " was able to cross the James and Mary in a few hours of the start from the port, which distance under the old arrangements would have taken approximately 25 hours to complete.

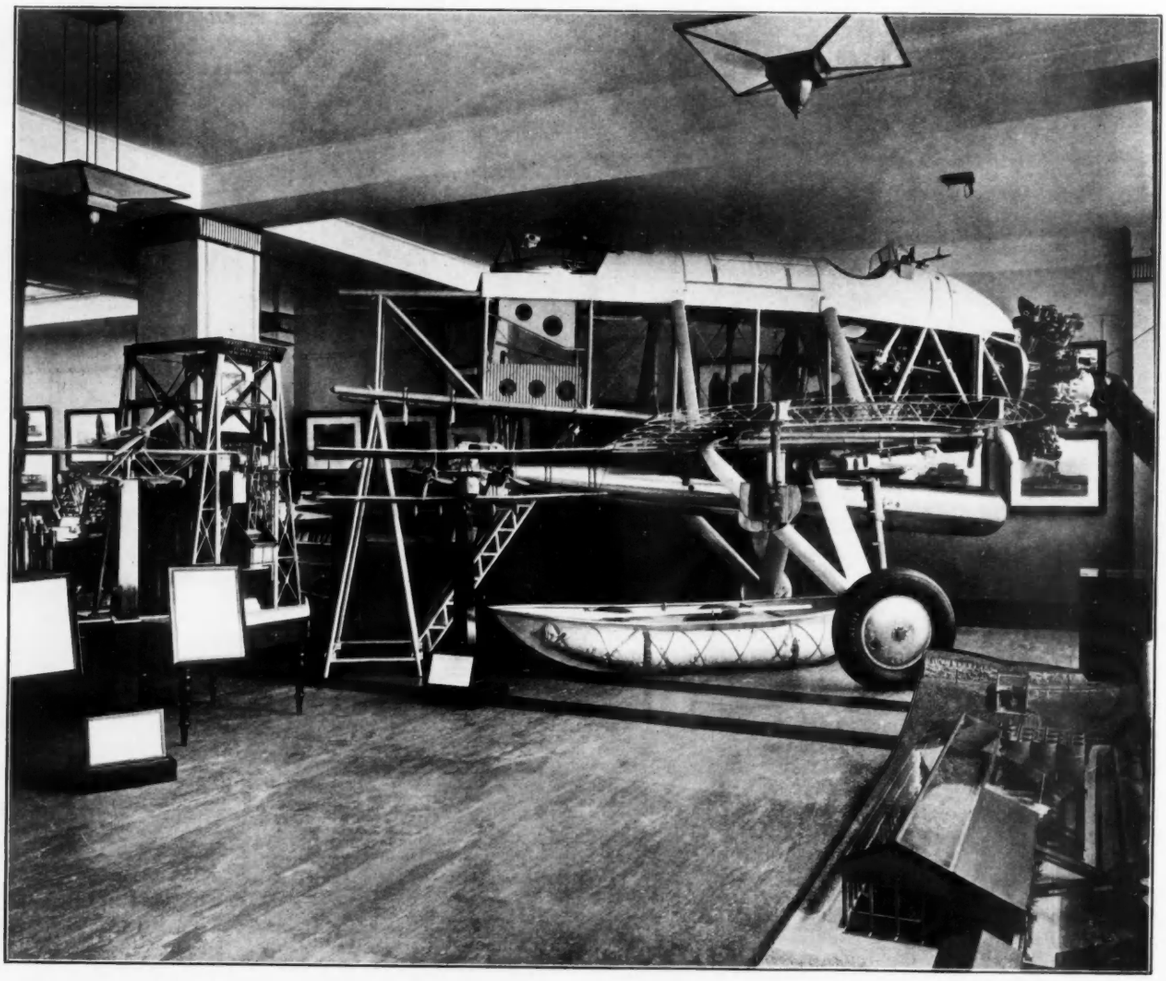
Incidentally, the new arrangement meant that the agents of the Company saved Rs.2,500 in out-of-pocket expenses, and the pilot gained a day, as he left the " City of Exeter " at the Sandheads 25 hours before he would have otherwise been able to do. It is understood that the complete success of the evolution will obviate the need for any outward bound vessel from Calcutta, having to waste 24 hours by mooring at Budge Budge in future.

Foreign Piece-goods Trade of Calcutta.

During the twelve months ending March, 1931, the value of piece-goods to Calcutta decreased, as compared with the corresponding period of 1929-30 by Rs.76 crores or 31 per cent., and amounted to Rs.165 crores only. The grand total of imports, exports and re-exports amounted to Rs.390 crores as against Rs.559 crores, a decrease of Rs.169 crores or 30 per cent. Regarding this decrease piece-goods are responsible; 560,509,277 yards valued at Rs.140,590,237 in respect of grey goods, 201,942,346 yards valued at Rs.70,703,817 in respect of white goods, 237,762,918 yards valued at Rs.83,282,831 in respect of coloured printed and dyed goods, and 14,743,126 lbs. valued at Rs.29,148,709 in respect of cotton yarn. Altogether a total valued at Rs.323,725,594.

Vickers Limited

New Showroom opened in London



A Section of the Showroom, showing (on the left) a model which illustrates the utility of the "Norfolk" spade. Also shown in the picture is an aeroplane carrying an 18-in. torpedo.

Messrs. Vickers Ltd. and its allied Companies recently opened a showroom in Broadway, Westminster, for the purpose of showing the various work undertaken by Vickers and their allied Companies.

In most cases models are exhibited in the showroom, but in some cases the actual article is shown, and, of course, there is not the amount of space available to show everything manufactured by Vickers Ltd.

Some remarkable models of warships are on view and the majority of space is devoted to the armament side of this firm, varying from rifles to an aeroplane which is shown carrying an 18-in. torpedo.

Regarding dock and harbour manufactures, the only articles exhibited are a 30-ton coal hoist and a model showing the " Norfolk " spade, although the firm's activities in dock and harbour work extend to practically every branch, but naturally space is not available in the showroom to display them.

Hull and the Humber

Navigation of the Humber Estuary.

THE prominence given of late to the navigation of the Humber estuary serves to recall the fact that the Humber Conservancy Board are in the possession of a valuable scheme for the improvement of the river approved some years ago by Sir William Matthews, K.C.M.G., Mr. Anthony Lyster and Sir John P. Griffiths, consulting engineers to the Board. The scheme, which is divided into three parts has for its main object the construction of half-tide training walls at certain parts on either bank with a view to increasing the flow and improving the navigable channel. The works recommended were half-tide training walls in the river Humber from Taxfleet Ness to Oyster Ness (five miles in length) from Hessle Low Light to the western extremity of St. Andrew's Dock, Hull, and from the eastern extremity of King George Dock to Paull, and, if considered necessary, to Immingham; in the River Trent from Island House to Trent Falls; and in the river Ouse from Ousefleet Ness to Trent Falls. The report also proposed the removal of the rocky ledge known as Brough Scalp. The consulting engineers, in their report, stated that although they could not recommend the scheme as the most effective that could be devised for the improvement, as a whole, of the river Humber, and the proper conservation of its navigable channel, they nevertheless considered that the formation of suitable training walls and the protection of the marginal banks of the river from erosion, aided by certain dredging operations, would prove the most effective means for the accomplishment of the objects desired. Thus far, however, little progress has been made towards carrying out the entire scheme, though a good beginning has been made by the works now in progress in the upper reaches of the river in conjunction with the Aire and Calder Navigation, towards the cost of which the Humber Conservancy Board were under statutory obligation to contribute not more than £76,000. These works, which are locally known as "the fish tail," are designed to train the rivers Ouse and Trent into one united channel, this being regarded as the key to all permanent improvements of the river Humber. These contributory rivers, meeting as they do at present, dissipate their energies by striking at each other, and the intention of the half-tide walls now under construction is to train the currents of the two to a point at Trent Falls where they will flow steadily on to Broomfleet and form a good deep channel down the Humber to Hull and Paull. The original estimated cost of the entire scheme down to Paull was £375,000 (pre-war) and a period of 15 years was given as the probable time occupied for its completion. The war, however, intervened, but the main question now, as then, is the financing of the scheme. It is hoped that as soon as the Board find themselves favourably situated in this respect they will undertake the subsequent sections and so ensure for the Humber the improvement and prominence of its main navigable channel, both above and below Hull.

Annual Meeting of the Humber Conservancy Board.

Mr. J. H. Fisher, J.P., presiding at the annual meeting of the Humber Conservancy Board, stated that the receipts on revenue account amounted to £40,789, a decrease of £892 as compared with the previous year. The expenditure, after the deletion of capital payments of £23,588, was £31,920, the total net revenue expenditure being only £220 more than that of 1929 in spite of the fact that the cost of overhauling the Board's craft was £1,359 more than in the previous year. That satisfactory result, however, was due to certain measures of economy adopted on the recommendation of the Marine Committee in the employment of the Board's craft and floating staff which had resulted in a saving of as much as £1,700 during the year. Referring to the Trent Falls improvement works now being carried out by the Aire and Calder Navigation at the confluence of the Trent and the Ouse, Mr. Fisher said that at the end of the year a part of the "fish tail" had been completed for a distance of 773 yards and a further 75 yards were nearing completion. The training wall in the Ouse had been continued for a distance of 500 yards during the year, but had not yet reached the jurisdiction of the Board. Of the sum not exceeding £76,000 which the Conservancy Board are committed to pay towards the cost of the works in the Humber and Trent, £21,000 had been paid in 1930 and a further payment of £10,897 had been made in the present year. Replying to a question by Mr. W. Minnitt Good regarding the progress of the Trent Falls works, the Chairman said that difficulties had arisen in carrying out the works which were not unusual in works of that description and that the cost would be more than the estimate. It had, however, nothing to do with the Conservancy, as their liability was strictly limited by Act of Parliament. Mr. J. H. Fisher was unanimously re-elected Chairman of the Board, and Mr. J. Bentley Bennett (Goole) Deputy Chairman.

The Humber Bridge Bill.

Commenting on the proceedings in connection with the Humber Bridge Bill, Mr. Fisher, at the meeting of the Humber Conservancy Commissioners, said that the Parliamentary contest in which they were engaged was the most serious opposition which the present Board had had to enter into. He added that the Board were advised and believed that the consequences of the construction of the bridge upon the river and its navigation might be so detrimental as to be even beyond repair and that therefore nothing but the most determined fight against it was possible.

Bridlington Harbour Affairs.

The proposal of the Bridlington (East Yorkshire) Corporation to connect the north and south parts of the sea-front by the construction of a new road round the land side of the harbour is not meeting with the entire approval of the Bridlington Harbour Commissioners. The report of a sub-committee appointed to consider the Corporation scheme, suggests several modifications, and it has been approved at a full meeting of the Board. The sea-front at present is split into two parts by the Harbour. The Town Council's plan is to construct a new road which would involve the reconstruction of the old part of the town round the harbour and the filling-in of part of the harbour itself. As the quay is much lower than the street level, the whole of that part of the harbour known as Clough Hole would have to be filled in to the level of Garden Walk. The Sub-Committe reported that it was not advisable to reduce the water area of the harbour by handing over Clough Hole to the Town Council, their view being that even as it is the area of the harbour is not sufficient to accommodate conveniently all the vessels which use it in the summer months. It is the intention of the Board to make greater use of that part of the harbour as soon as they are able to afford the cost of its improvement. Moreover, they have already been approached by the Royal Yorkshire Yacht Club and asked to make a wet dock there with lock gates to store their vessels during the winter. The Commissioners also object to the proposed junction of the new road at South Cliff road on the grounds that it would do away with so many baiting sheds now being used by the access to the South Pier difficult and dangerous and that it would do away with the wharf at the west end of the harbour. The Commissioners feel, however, that their objections to the Corporation's proposals are not such as to make the total abandonment of the scheme necessary, and they make the alternative suggestion that the proposed roads, both out of Cross Street and Manor Street, should be built on piers and bridges, thus doing away with the necessity for filling in Clough Hole. They also suggest other modifications which, if adopted, would not only obviate interference with the fishing trade but would tend to materially reduce the cost of the scheme. At a meeting of the Works Committee it was reported that work had been proceeding at the north pier dealing with two cavities which had long been a menace to the safety of the structure, and that the pier had now been restored to a perfectly sound condition. The revenue accounts of the Bridlington Harbour Commissioners for the year ended March 31st showed receipts £5,578 and a balance in hand of £4,437.

Reconstruction of a Pier in Brake.

The Fettraffinerie A.G., Brake, have given an order for the reconstruction of their pier installation to the Tiefbau Aktien-Gesellschaft "Unterweser," Blexen. The installation is to have a total length of almost 150 metres.

The Institute of Transport.

The Council at its meeting on Monday, May 11th, elected the undernamed to take office on October 1st, 1931:—

President: Mr. Frank Pick, Managing Director of the London Underground Railways and L.G.O.C. Group.

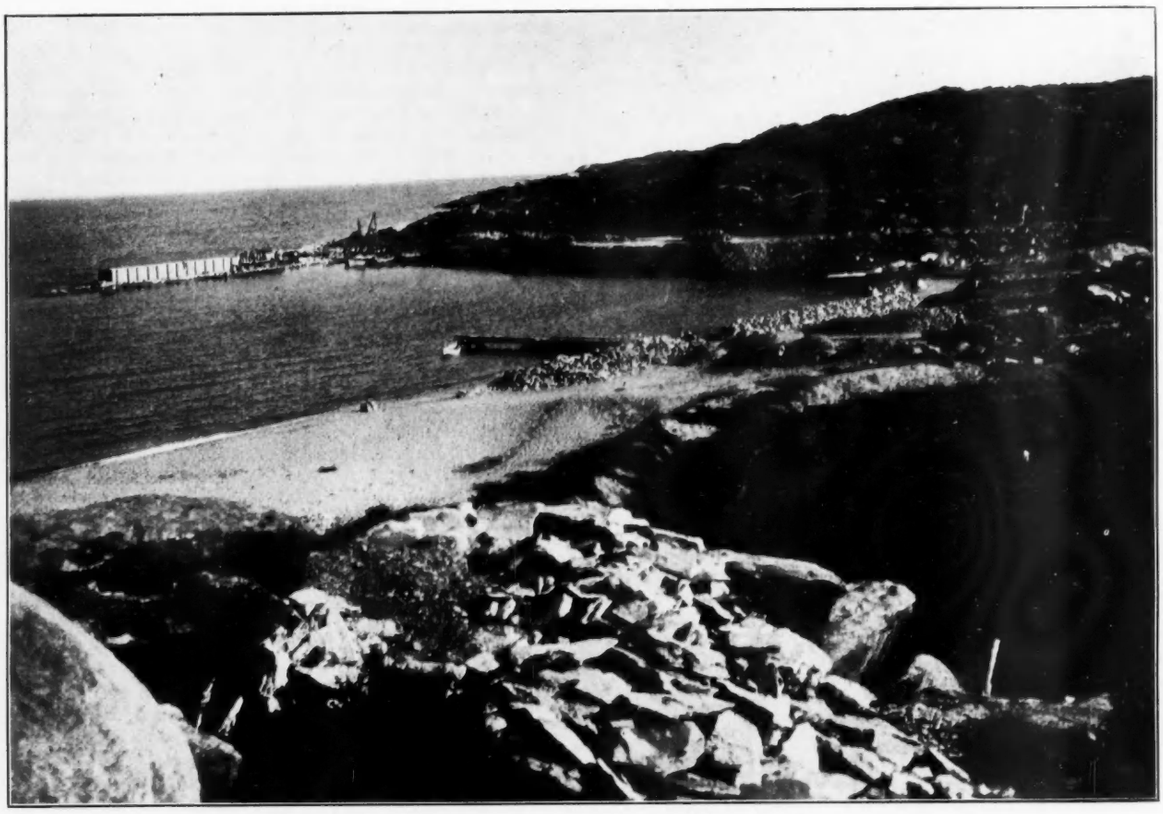
Past Presidents to serve on the Council: Sir Henry P. Maybury, G.B.E., K.C.M.G., C.B., Sir Joseph Nall, D.S.O., T.D., D.L., Mr. Roger T. Smith, Sir Josiah Stamp, G.B.E., The Hon Sir Arthur Stanley, G.B.E., C.B., M.V.O.

Vice-Presidents: Mr. A. L. Barber, Mr. R. Bell, C.B.E., Mr. J. H. Follows, C.B.E., M.V.O., Mr. R. J. Howley, C.B.E., Major-General S. S. Long, C.B., Sir David J Owen.

Hon. Treasurer: Sir Henry P. Maybury, G.B.E., K.C.M.G., C.B.

Hon. Librarian: Mr. W. V. Wood.

Port of Cavalla



Part of the construction which has just been completed.

View of the Harbour Construction in progress.

The Port of Cavalla

Enlargements and Improvements Projected *Statistics of the Port*

By Antonio Giordano

A General View of the Port of Cavalla.

THE town and harbour of Cavalla were founded in the Middle Ages by ancestors of the present King Fuad, and in a short time a monument is to be unveiled to commemorate the foundation. The prosperity of this harbour has always been due to the export of tobacco, which has attracted merchants and ships from all parts of the world, including North America. After having been under the Venitian Republic, which also owned the famous Porto Lagos, east of Cavalla, and which has been wholly destroyed, Cavalla became part of Turkey, until the first Balkan War in 1912-13, and has since changed hands several times, having belonged to Greece and Bulgaria alternatively. The effect of these changes of possession can easily be traced in visiting both the town, the port and the whole district, where communication is very poor and goods for export are brought to Cavalla by very primitive means. The population of Cavalla, which was about 60,000 in 1921, is now about 100,000, the increase being largely due to the arrival of the Greek refugees from Anatolia and the resumption of active tobacco trade through the port.

Cavalla is situated in the Northern Aegean Sea, east of Salonica, in a sort of harbour formed by the coast of Western Thracia and the island of Thasos, which protects the waters of the port. The town and port are situated on a small peninsula and the district is rather hilly. The only existing communication with the hinterland is a route connecting it with Drama, which is the main town of the district and is served by the Salonica-Alexandropolis (Dedeagatch) Railway. Although the distance between Drama and Cavalla is only 37 kilometres, the route is in such a poor state that an automobile takes about two hours to make the trip, and only recently Messrs. Macris and Co.—who are connected with the Royal Dutch Shell—have obtained the concession for repairing the existing road. There is also a project for the construction of a railway from Drama to the sea at Cavalla, but according to what I have been told by Prof. Coronis, the General Manager of the Greek Railways, the Greek Treasury must for the time being confine itself to other more important undertakings. However, there is no reason why the various international concerns which are interested in the development of trade through the port of Cavalla should not undertake this construction for their own benefit; also, taking into consideration that should Greece and Bulgaria come to an understanding in regard to the direct connection between the Greek railways and the Bulgarian railways through the construction of a small line from Siderocastron (line from Salonica to Alexandropolis) to Koula (Petric), the situation will be as follows:—

CAVALLA.	Kilometres	SALONICA.	Kilometres
Cavalla-Drama	35.0	Salonica-Siderocastron ...	131.0
Drama-Siderocastron ...	100.0	Siderocastron-Koula ...	25.0
Siderocastron-Koula ...	25.0	Koula-Radomir	166.5
Koula-Radomir	166.5	Radomir-Sophia	47.7
Radomir-Sophia	47.7		
Cavalla-Sophia	374.2	Salonica-Sophia	370.2

It will be noticed that the position of Cavalla would be no less advantageous than the position of Salonica, and the question assumes a rather noteworthy importance taking into consideration that Cavalla is already feeling the competition of Salonica, although its trade has shown a noteworthy increase in the course of the past few years. The statistics of the Mercantile Marine Department of the Greek Ministry of the Navy show the following progress:—

SHIPS CALLING AT CAVALLA*

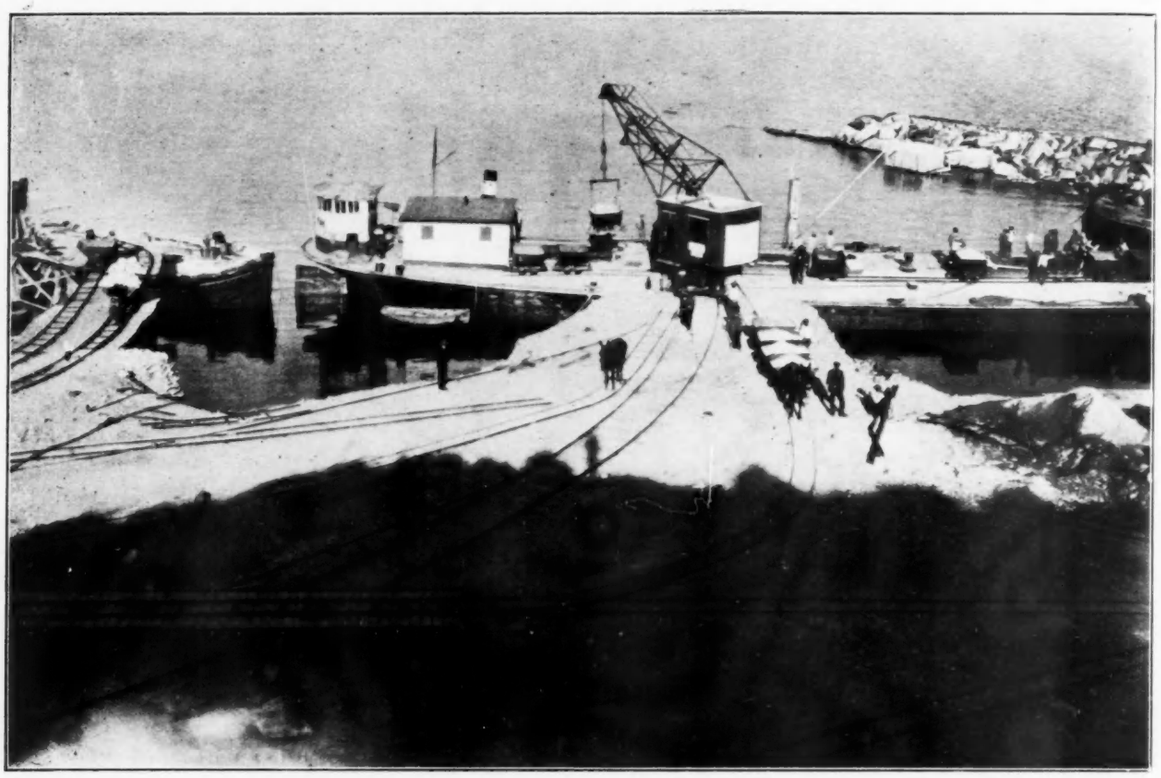
	No.	N.R.T.
1924	746	481,922
1925	887	535,925
1926	957	505,999
1927	989	491,922
1928	668	465,335
1929	758	483,386

*Also including ships under 30 N.R.T.

In this connection it may also be interesting to compare the figures during the past two years of boats of the various countries calling at Cavalla:—

	1929		1928	
	No.	N.R.T.	No.	N.R.T.
Greek	590	196,978	521	195,488
Italian	68	114,167	64	114,998
German	25	33,072	24	31,668
Dutch	14	21,179	14	20,648
British	15	33,795	14	29,994
American	12	44,106	13	49,705
Bulgarian	15	16,367	5	6,986
Jugoslav	4	2,785	4	3,332
Swedish	5	6,890	4	5,147
Norwegian	6	11,005	3	3,495
Other Flags ...	4	3,042	2	874
	758	483,386	668	465,335

Port of Cavalla



Harbour Enlargements in Progress.

Harbour Enlargements in Progress.

Port of Cavalla—continued

It will be noticed that British, Bulgarian and Norwegian ships have shown a noteworthy progress, evidently due to the increasing number of liners which have called at Cavalla to load tobacco. Ships arriving direct from foreign ports and clearing direct to foreign ports from Cavalla have not been very numerous, as will be noticed from the following figures:

	ARRIVALS			CLEARANCES		
	No.	N.R.T.	Tons (Goods)	No.	N.R.T.	Tons (Goods)
1922	12	21,595	2,347	6	24,989	2 553
1923	17	18,412	647	17	22,260	647
1924	55	66,866	7,218	51	69,671	2,167
1925	41	48,179	9,726	36	48,371	3,576
1926	38	44,754	6,108	38	48,107	1,916
1927	32	88,135	7,532	20	26,884	1,066
1928	42	76,419	15,440	26	33,238	3,246
1929	75	120,469	17,461	28	43,697	3,091

On the other hand, if one considers the figures for 1929 in detail it will be seen that much of the trade with foreign countries, particularly as far as exports are concerned, is being undertaken by ships which also call at other ports:—

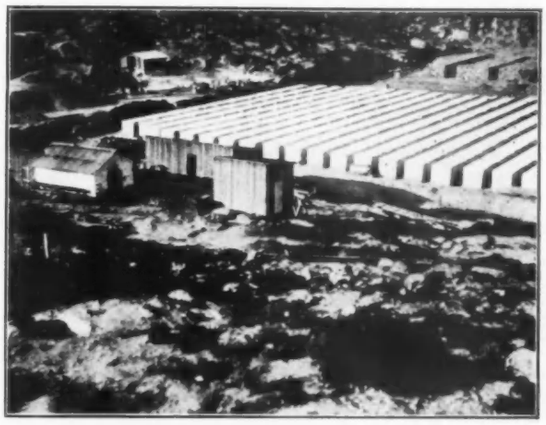
	ARRIVALS		CLEARANCES	
Country.	Total Goods Tons	Goods carried by ships calling at other Greek Ports Tons	Total Goods Tons	Goods carried by ships calling at other Greek Ports Tons
Greek	64,779	511	10,324	—
British	3,673	1,830	2,642	2,031
American	1,041	1,041	2,200	1,397
Bulgarian	3,483	1,157	—	—
German	—	—	3,364	2,563
Jugoslavian	15	15	132	102
Italian	6,960	5,751	3,736	3,733
Norwegian	812	285	302	302
Dutch	791	—	1,599	1,032
Polish	571	—	460	460
Swedish	228	228	690	—
Turkish	20	—	—	—

The total imports of goods at Cavalla during 1929 totalled about 100,000 tons, of which more than 70 per cent. were imports from Greece and only about 30 per cent. from foreign countries, and among these there were flour, colonial products, oil cakes, mineral oil, linseed oil, gasoline, lumber and machinery, while exports totalled about 30,000 tons, of which over 50 per cent. were shipped abroad and included tobacco.

In connection with the exports of tobacco, the following schedule indicates the shipments of this product from North Aegean harbours:—

	Cavalla only Tons	Cavalla and Salonica together Tons
1924	11,763	15,125
1925	13,368	16,446
1926	14,521	18,000
1927	17,361	19,399
1928	12,665	24,375
1929	16,044	28,438

It will be noticed that while in 1924 about 80 per cent. of the export of tobacco from Aegean ports went through Cavalla, at present only 60 per cent. goes through this port, which means that the competition of Salonica is considerably influencing trade at Cavalla.



Blockyard where Artificial Blocks for the New Port are made.

However, it should not be forgotten that the Caisse du Port (Harbour Board) at Cavalla has taken up the question of harbour enlargements, as a first step, so as to provide efficient and up-to-date facilities such as obtain at other Aegean harbours. At the present time there are only small quays in the port of Cavalla and ships had to anchor off the port and unload and load by means of lighters, representing a rather dangerous method, particularly for such delicate goods as tobacco, and very often bales have fallen in the sea, causing heavy losses to shippers.

The project relating to the construction of the new harbour at Cavalla is divided into two parts; the first part, which involves an expenditure of 70 million drachmas, includes:—

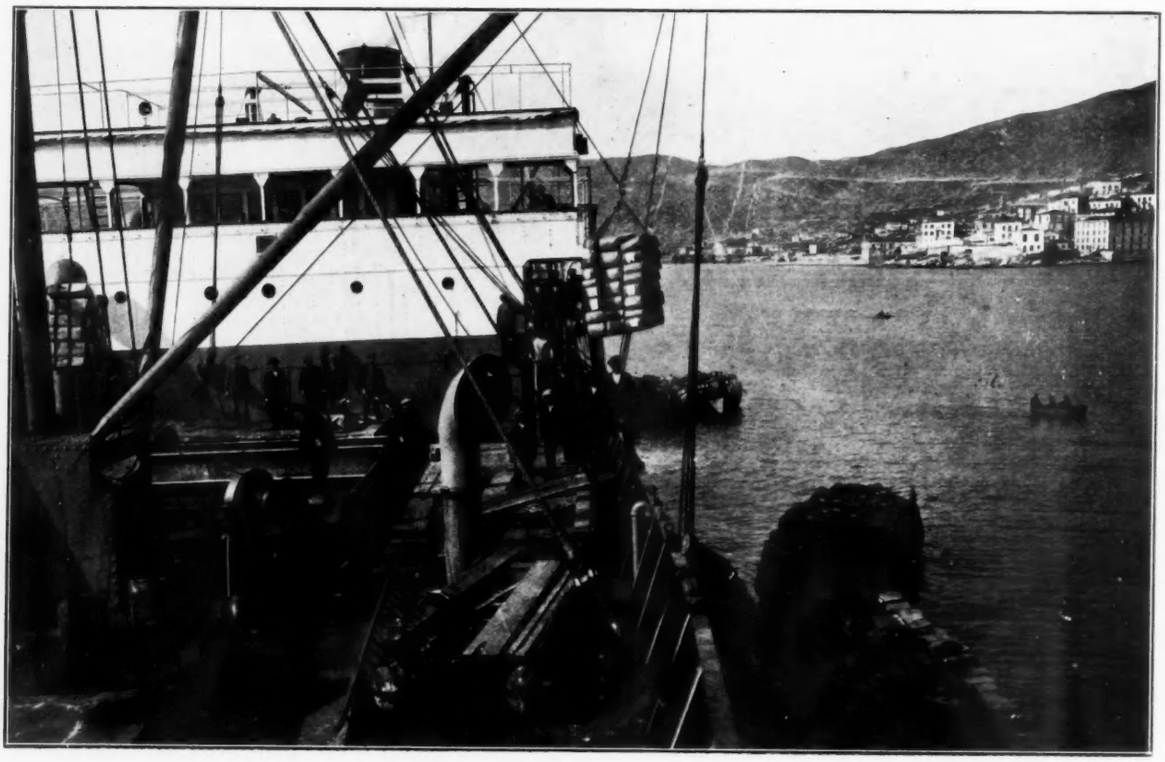
(a) The construction of a breakwater 700 metres long.
(b) The increase of the depth of water to 9 metres; and
(c) The construction of 300 metres of quay in the interior part of the harbour.

The second part of the work, which is to be put in hand as soon as the first part is completed, involves an expenditure of 80 million drachmas, and includes:—

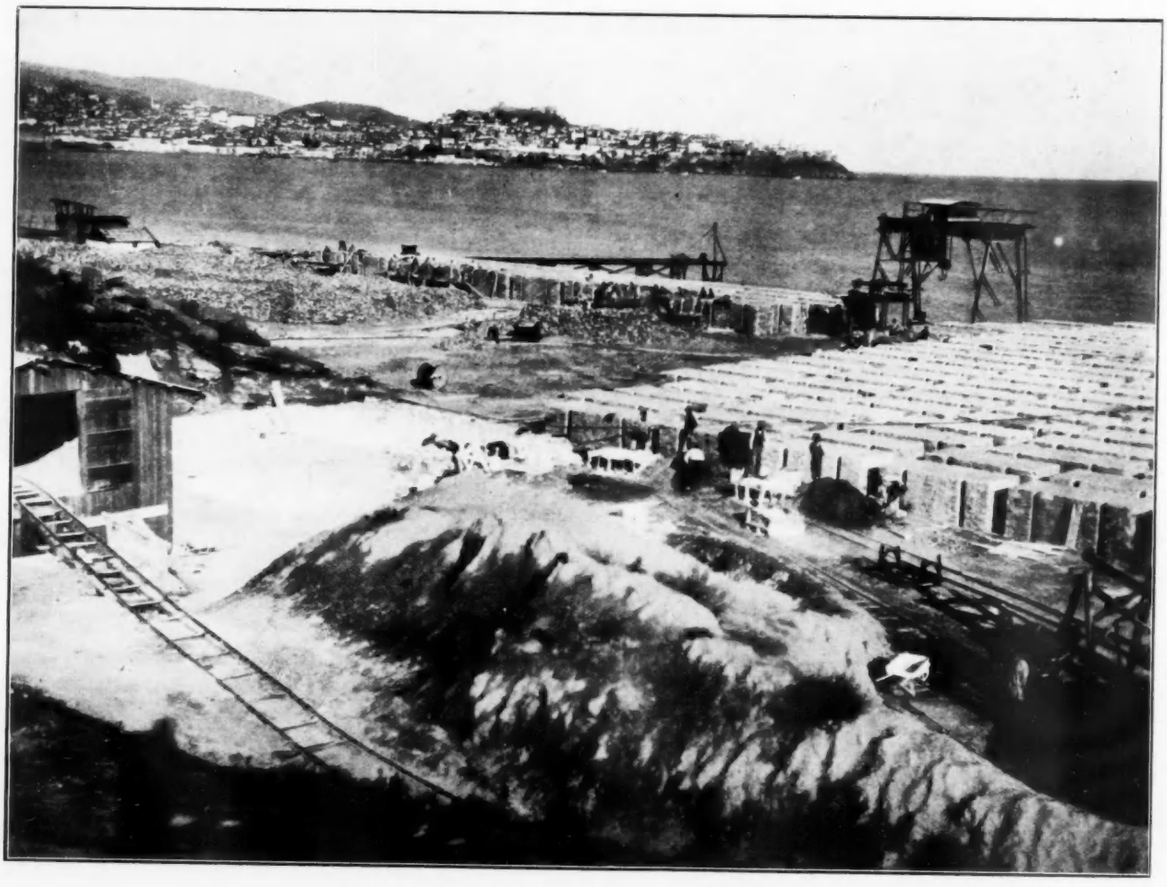
(a) The construction of a jetty 220 metres long, and
(b) A further 600 metres of quayage in deeper water.

View of Cavalla, showing how the New Harbour will appear when completed.

Port of Cavalla



A Steamer loading Tobacco.



Another Blockyard for making Artificial Blocks.

Port of Cavalla—continued

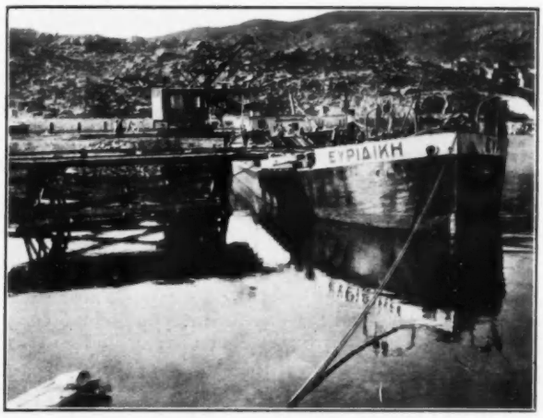
The breakwater, the construction of which has just been started, consists of a wall 11 metres in breadth built with artificial blocks on a bed of stones at a depth of 11 metres below the sea level. The artificial blocks have a weight of 40 tons each.

The quays are also built with artificial blocks at a depth of 9 metres on a rocky bottom, resulting from the excavations which have been made to increase the depth of water. The artificial blocks have been built with a mixture of Santorino clay and chalk without cement. The material for the construction of the blocks is obtained from the granite mines about two miles from Cavalla. Granite is brought to the block-yard by means of lighters towed by steam tugs of the Ertha, Société des Entreprises Maritimes et pour la Construction des Ports, to whom has been entrusted the construction of these developments, and the blocks are laid by means of a steam floating pontoon of 50 tons capacity. Although protected by the island of Thasos, southern winds are very strong in the harbour of Cavalla and hinder a quick completion of the new works, the accomplishment of which should be reached, according to the terms of the concession, in 1935. The hydraulic "mortiers" employed for the construction of the blocks consist of 2½ parts of Santorino clay and 1½ parts of chalk or of 400 kilograms of cement for each cubic metre of sand.

As soon as the first portion of the work is terminated, the Caisse du Port at Cavalla has decided to undertake the construction of four warehouses in concrete, giving an area of about 40,000 square metres, fitted with appropriate unloading facilities and particularly designed to handle the tobacco export trade. Ships will then be in a position to anchor alongside in the inner part of the port, and for this purpose electric cranes will be provided in order to speed up operations.

At present labour is rather slow and expensive as loading must be done by means of lighters, and it often happens that tobacco must be stored on the quay pending the arrival of the steamers, owing to the lack of appropriate facilities. Charges are practically identical with those at any other Greek harbour, with the exception of pilotage, which is not necessary, as ships do not enter the present harbour. Unloading and loading is often done by receivers and shippers direct, the steamship agents delivering the goods, but in general liner agents are doing such operations on account of their own lines.

The rate of discharge is about 80 tons per hatch per day for general cargo, but it differs considerably according to the situation of trade, as the lack of lighters during the period of active shipping may delay unloading. Owing to the small number of oil engined lighters, small sailing vessels are also used to convey goods from the ships to the quays.



Discharging Posolane at Cavalla for use in Harbour Construction.

Excavating in progress on Harbour Enlargement Scheme.

Labour is no more expensive than at any other Greek port, and it is now being organised and is working according to a tariff established by the Chamber of Commerce and Industry. Water supplies cannot easily be obtained at present, owing to the fact that ships are not entering the inner port, while other supplies of any kind can be obtained at reasonable rates.

It can be seen, both from the figures relating to the tonnage calling at Cavalla and from the figures relating to the cargo handled by such tonnage, that an upward tendency has been shown by trade, which means that there is a need for the development of the harbour, but, of course, much depends upon the way the present harbour enlargements and improvements will be exploited, and in connection with the communications between Cavalla and the hinterland, as there is no doubt that should the various leading tobacco export firms take into consideration the possibility of obtaining the concession to build a railway from Cavalla to Drama, or to any other centre of the hinterland, the port of Cavalla, being already included in the schedule of the regular services of the leading lines such as the Lloyd Triestino, Ellerman's Wilson Line, American Export Lines, Deutsche Levant Line and Orient Dienst, etc., may eventually become an important port among the various harbours of the Northern Aegean Sea.

North-East Coast Notes.

Unsatisfactory Features in Reports submitted to the Tyne Commissioners.

THERE were some verey unsatisfactory features in the reports submitted to the Tyne Commissioners at their meeting on May 19th. There was a very material decrease in the coal and coke shipments, and the amount of idle tonnage was shown to be still on the upgrade. Only one vessel of 8,120 gross tons was launched in April, a decrease of three vessels and 23,769 tons compared with the same month of last year, while the decrease for the four months of this year was 11 vessels and 43,937 tons compared with last year.

The coal and coke shipments were far below what they were in the early part of 1930. In April they were 1,175,401 tons, or 161,326 tons less than in April last year, and 511,071 tons less than in April, 1913. In the four months of this year the aggregate was 4,967,483 tons, against 6,065,218 tons last year, a decrease of 1,097,735 tons, or 18.10 per cent. and 6,448,285 tons in 1913, a decrease of 1,480,802 tons, or 22.96 per cent. In the bunker section coal in the past four months was up 16,555 tons, but oil fuel decreased 12,240 tons.

The number of vessels laid up was still extraordinarily high. At the end of April they totalled 135 vessels of 249,140 net registered tons, compared with 134 vessels of 242,280 tons at the end of March, and 110 vessels of 200,865 tons at the end of April last year.

Alderman C. M. Morton said he would like to know what was being done in respect to the proposed erection of a new coal staith outside Northumberland Dock. There had been correspondence between the Commission and the Mines Department, he understood, and yet they had heard nothing about it.

The Chairman (Mr. H. P. Everett) said the matter was under discussion, but so far only preliminaries had been dealt with. One of the things they required to know was whether they would get a Government grant towards the cost.

It is understood that the proposed staith is intended to afford a more direct and larger outlet for the shipment of coal from one of the groups of collieries situated midway between the Tyne and Blyth.

North-East Coast Notes—continued

Bergen-Tyne Service Development.

Keen interest was displayed at the beginning of May in the latest development of the Bergen-Tyne shipping service when the new motor vessel "Venus," built at Elsinore for Det Bergenske Dampskibsselskab, arrived in the Tyne on its maiden voyage. The vessel has been built with the direct object of expediting the service. It is intended that the "Venus" shall replace the mail boats "Leda" and "Jupiter" and will make a double crossing between the Tyne and Bergen twice weekly, leaving the Tyne Commission Quay at North Shields every Tuesday and Saturday. The "Venus" has a complete overall length of 412-ft., a beam of 54-ft., a registered gross tonnage of 5,600, and a displacement tonnage of 7,000. The "Venus" has a speed of 20 knots and is, therefore, the fastest motor ship afloat.

An illustration of the value of the service was soon forthcoming, for shortly after the vessel's arrival a consignment of goods was despatched from Glasgow at night. It reached Newcastle next morning, was delivered on the "Venus" a few hours later, and in another day was in Bergen.

Seven Hours Saved.

There was a notable gathering of representative people on the "Venus" the day after its arrival in the Tyne. Mr. Lehmkuhl, Chairman of the Bergenske Steamship Company, presided. He said it was as optimists they had built the "Venus," which was the world's fastest motor ship, and they had named her after a vessel which had made the voyage between Newcastle and Bergen some two thousand times. By accelerating speed they would save some seven hours, making the crossing in 21 hours from quay to quay, with 19 hours on the open sea. When the Tyne Commission built the new quay the Bergenske Company undertook to guarantee a certain amount of traffic, and they had more than fulfilled that obligation since the opening in 1928, notwithstanding that, due to abnormal depression, passenger traffic had been disappointing.

Mr. H. P. Everett, Chairman of the Tyne Commission, paid tribute to the shipping company, and expressed the hope that the trade between Norway and England would continue to improve, that the Bergenske Company would find employment for all their ships and would be able to order new ones.

Mr. R. Bell, Assistant General Manager of the London and North-Eastern Railway Company, said last year more than 14,000 persons used the service between the Tyne and Norway.

The Minister for Norway (Mr. B. Vogt) and Mr. A. W. Barrett, of the Norwegian State Railways, also spoke.

Wear Trade Figures.

The one bright spot in the trade returns of the Wear for the first quarter of the year was the increase in the coke exports. For the three months the total shipped was 23,850 tons compared with 17,550 tons, an increase of 36 per cent. On the other hand, the coal shipments which totalled 1,210,335 tons compared with 1,297,313 tons last year, showed a decrease of 6½ per cent. It is noteworthy that foreign bunker coal which aggregated 55,863 tons was 27 per cent. higher than the 1930 total of 43,920 tons.

The imports for the first three months of the year were:—

	Total 1930	Total 1931
Timber	19,132 loads	7,987 loads
Grain	2,854 qrs.	2,396 qrs.
Esparto	6,300 tons	3,313 tons
Iron Ore	20,478 ,,	13,228 ,,
Cement	2,569 ,,	2,698 ,,
Petroleum	25,518 ,,	21,389 ,,
Wood Pulp	2,247 ,,	552 ,,
Iron and Steel	5,069 ,,	2,118 ,,
Sundries	9,116 ,,	12,561 ,,

The exports for the first three months of the year were:—

	Total 1930	Total 1931
Machinery	3,892 tons	1,782 tons
Iron and Steel	933 ,,	1,091 ,,
Pitch	8,782 ,,	8,336 ,,
Creosote	4,032 ,,	—
Petroleum	4,949 ,,	4,617 ,,
Sundries	1,872 ,,	1,392 ,,
Total ...	24,460 tons	17,218 tons

Quick Despatch.

The Sunderland South Docks coal shipping staff, the Colliery Company, and the London and North-Eastern Railway, all combined recently to establish a record shipment at Nos. 1 and 2 coal belt-conveyors. The vessel concerned was the steamer "Uganda," 402-ft. long, 52-ft. beam, with 25-ft. draft, the total quantity of coal shipped being 8,238 tons. Between 6.15 on Easter Tuesday morning, and 5.45 on Wednesday morning, no less than 5,962 tons of bunkers and cargo were shipped, the vessel sailing on Thursday with 8,238 tons on board. This speaks volumes for the coal shipping appliances in question when colliery and railway companies unite to secure despatch.

Heavy Expenditure Completed.

At the April meeting of the Blyth Harbour Commissioners Mr. Ridley Warham, Chairman, submitted the coal export figures for the quarter ended 31st March, 1931, with comparitive figures for 1930 and 1913.

The figures for the first quarter were as follow:—

1931	1,136,893 tons
1930	1,374,670 ,,
1913	1,103,740 ,,

The total export shows an increase for the quarter of 3 per cent. on 1913, but a decrease of 17 per cent. on the 1930 figures.

The Chairman stated that it was quite impossible to make any reliable forecast as to the outlook for the coal trade in the near future, and that it was fortunate that all items of heavy expenditure had been completed so that for the present, at any rate, there was nothing more than the ordinary maintenance work to be provided for.

Personalia.

Mr. Robert Strachan, of Gateshead, one of the best known men in the coal exporting and kindred trades has retired from the managing directorship in Newcastle of Messrs. William Cory and Sons, Ltd. He began his working career on the Quayside on February 17th, 1880, and was appointed manager of Messrs. W. Cory and Sons at the inception of the company in 1896, and was appointed managing director in 1917.

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Mr. R. S. Dalgliesh has been appointed representative of the Newcastle Chamber of Commerce on Lloyd's Register in succession to Mr. J. Emery Tully, who retires on June 30th.

* * * *

Mr. T. G. Wood, Senior Board of Trade Surveyor on the Tyne, has retired after half a century's service under the Government. Mr. Wood commenced his career as a shipwright in Sheerness Dockyard in 1882 and was appointed a ship surveyor by the Board of Trade in 1900.

* * * *

Mr. Alfred Raynes, of Messrs. Steel and Raynes, Ltd., Newcastle, has been elected Chairman, and Mr. J. T. Gracie, of J. L. Gracie and Son, Ltd., Vice-Chairman, of the North-East Coast Coal Exporters Association.

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Mr. Thomas Coulthard Nevison, who for 35 years was Marine Superintendent of the North of England Steamship Company, has just died at West Hartlepool. He was 81 and retired from business five or six years ago.

* * * *

Mr. John A. Greener, Managing Director of Messrs. William Mathwin and Son (Newcastle), Ltd., coal exporters and shipbrokers, has been elected a traders' representative on the Tyne Improvement Commission, to fill the vacancy caused by the retirement of Mr. J. E. Tully.

Trials of the Dredger "Pilcomayo."

Messrs. Lobnitz and Co., Limited, have successfully completed the trials of the large twin-screw suction hopper dredger "Pilcomayo," which they have built to the order of the Chilian Government.

The dredge has a hopper capacity of 1,900 tons, which she can fill with spoil in under one hour by means of two 20-in. dredge pumps, or if required, these pumps can be used for discharging the dredged spoil or the hopper contents either directly ashore, through a floating pipe line, or into barges alongside, all the controls for these manoeuvres being grouped in a central operating house and hydraulically operated.

If very hard clayey ground is encountered the suction pipe, which is lowered to the bottom, can be fitted with a very powerful rotary cutter in place of the normal suction head and the dredge is manoeuvred and walked forward by means of two long spuds or legs.

The dredge is fitted with four 500 i.h.p. engines, two of which are normally used for the pumps and two for the propellers, but if full power is required, all four engines can be connected to either the pumps or the propellers by means of hydraulically-operated friction clutches.

The dredge whose length is 285-ft. and whose beam is 48-ft. has a speed of over 10 knots when fully loaded.

Captain Victor Contreras and Captain Luis Burgos, who have been the representatives of the Chilian Government during construction, and Rear-Admiral Felipe Weigand and Lt.-Commander O. Bunster, of the Chilian Naval Commission in London, were present during the two days' trials.

Scottish Harbour Notes

Suggested Reconstruction of the Caledonian Canal. ***Proposed Extension of Bo'ness Harbour***

New Dock at Glasgow to be Officially Opened by the King.

GREAT gratification at the news of the forthcoming visit of Their Majesties the King and Queen to Glasgow was expressed at a recently held meeting of the Clyde Navigation Trustees. The Chairman (Mr. William F. Robertson) said that when the King and Queen visited Glasgow they would officially open the new dock at Shieldhall. This most gracious and generous decision of Their Majesties would give enormous pleasure and satisfaction to the community, while it would place the Clyde Navigation Trustees more deeply than ever in debt to Their Majesties for their continued interest in the West of Scotland. It is understood that, when Their Majesties reach Glasgow on the appointed day, they will drive down to the Bridge Wharf, where they will board a steamer to be provided by the Trust, sail to the entrance of the new Shieldhall Dock, and thereafter land somewhere about the head of the dock, where the opening ceremony will take place.

Important Improvements to be undertaken at Mallaig.

Important improvements are about to be made in connection with the fishing industry at Mallaig, the harbour for the Hebrides. The work to be undertaken in this connection by the London and North-Eastern Railway Company (assisted by a Government grant) will include the widening of the existing fish wharf eastward to provide additional accommodation and an increased depth of water for vessels alongside; the extension of the southern arm of the fish wharf to provide further accommodation for vessels; and to construct a triangular extension to the fish curing stance in order to provide additional curing space as well as improved access from the public road. More commodious boat stairs are also to be constructed on the south side of the wharf to admit of small craft being dealt with at all states of the tide; while a considerable amount of dredging is to be undertaken. This scheme is being undertaken with the assistance of a Government grant under the Development (Loans, Guarantees, and Grants) Act for the relief of unemployment. Mallaig is the principal harbour for the fishing fleets which operate off the Hebrides, and is also the railway terminus for the Isle of Skye and other Hedridean ports.

Suggested Reconstruction of Caledonian Canal.

Recently a deputation representing Inverness Town Council had an important interview with the Lord Privy Seal (the Right Honourable Thomas Johnston, M.P.) on the question of the reconstruction of the Caledonian Canal in order to allow large vessels to pass through and to provide work for the unemployed. Mr. Johnston (who was very sympathetic) said the whole question would have to be put forward to a public body, and in particular it would be necessary to get definite information as to what extent the canal would be likely to be used by large vessels. Afterwards Mr. Johnston had an interview with Mr. Porter (resident engineer at the canal) and obtained further information as to the present condition of the canal.

At a public meeting in Inverness Town Hall Mr. Johnston (in answer to a question as to whether his party was in favour of widening the canal) replied that the real question was whether the proposition was an economic one. " If it can be proved that widening or extension of the Caledonian Canal," he said, " would be a project of economic benefit to the country, it would be prepared to examine it sympathetically. If it cannot be proved or reasonably estimated that such works on the canal would bring an economic return, then it would be a sheer waste of national resources to spend money on it, just as it would be on the many other projects throughout the country which have been and are being submitted to the State."

Annual Meeting of Stonehaven Harbour Trustees.

At the recently held annual meeting of Stonehaven Harbour Trustees it was intimated that the Fishery Board had made a grant of £1,500 for the repair of the North Pier, and this news was received with much satisfaction. In securing this grant it was stated that Mr. James Scott (the member of Parliament for the constituency) had played a leading part, and his efforts in this matter were warmly commended. A previous grant of £500 was made to the Trustees towards this work of repair, and, with the new and more substantial grant, a scheme of considerable importance can now be embarked upon. It is anticipated that the work of repairing the North Pier will now be expeditiously proceeded with, and this will give employment to a goodly number of workers.

Suggested Acquisition of Portsoy Harbour by Town Council.

A prominent member of Portsoy Town Council had given notice of motion that the civic authorities should take immediate steps to acquire the local harbour as a municipal undertaking, but when this matter was introduced at a recently held meeting there was a general feeling expressed that this motion should be deferred meantime so that the Fishery Board might have time to send in their report. The mover of the motion stated his idea was that the local harbour should be acquired by the municipality on the best possible terms, and he urged that this would ultimately prove an asset to the town. He expressed himself perfectly willing, however, to defer to the wishes of his fellow members in leaving this matter in a state of suspended animation meantime, and the Town Council accordingly agreed to await the Fishery Board report before taking any further steps in the matter.

History of the Port of Glasgow.

In connection with a special " Civic and Empire Week " at Glasgow there has been issued a most interesting and illuminating book dealing with the history of Glasgow and its industrial development. This book contains a special chapter concerning the Port of Glasgow contributed by Mr. James MacFarlane (general manager and secretary of the Clyde Navigation Trust), and this deals with the local harbours from many different angles. It is pointed out it is the ambition of the Trustees that the River Clyde should take its rightful place as the entrepot for the North for imports from overseas—particularly from within the Empire—as it has become the great exporting centre for the bulk of Scottish industries. With this end in view, therefore, the Clyde Trustees in 1928-29 sent one of their principal officers on a trade mission to New Zealand and Australia, and the advantage of getting into personal touch with the producers and buyers of these countries had undoubtedly proved of benefit to the Port of Glasgow. In order to further foster trade, the Trustees have now established a Commercial Department, charged with the promotion and development of trade—both import and export—between the Clyde and countries overseas, particularly our Dominions. It is largely towards the development of Empire trade in Scotland that this new department will turn its attention, and it is confidently anticipated that the advantages which Glasgow offers to our Dominions will lead to greater reciprocal trade.

Proposed Extension of Bo'ness Harbour.

A deputation representing Bo'ness Town Council and the local trading community recently called at the Edinburgh offices of the London and North-Eastern Railway Company—who are the owners of the local harbour and dock—to discuss proposals for the extension of the harbour. This scheme is an alternative to the proposal for a new dock, the building of which was rejected on the ground of expense. Subsequently it was reported that technical and engineering difficulties—formidable, but happily not insurmountable—stood in the way of the extension of Bo'ness harbour and dock. It is understood that these difficulties relate particularly to the removal by dredging of a mudbank which is an obstacle to the larger types of steamers getting alongside any extension that might be carried out. Despite these difficulties, however, the work of extension will be duly continued.

Scheme for Repair of Breakwater at Buckie.

A new scheme has been inaugurated for the repair of the north breakwater at Buckie Harbour, where a breach was made by the heavy seas resulting in the stoppage of the excavation of the new basin of the harbour. A specially constructed barge has been procured from Aberdeen to prepare and lay large bags of concrete, each bag containing 40 tons of concrete. After the concrete is prepared the barge is towed out of the harbour by a steam drifter and the concrete sunk outside the pier.

Fishery Board Inspect Harbours in North of Scotland.

Representatives of the Fishery Board of Scotland recently undertook a tour of inspection of the fishing harbours in the North of Scotland. At Peterhead they met the local Harbour Improvements Committee, and afterwards inspected the harbour and deepening work and the construction of a patent slipway at Port Henry Harbour. They also visited Fraserburgh Harbour, and were entertained to dinner by members of the Harbour Board.

The London, Midland and Scottish Railway Company's Ports

Improvements to Scottish Ports in 1930

ALTHOUGH the year 1930 has seen a serious decrease in the Railway Company's revenue, due largely to severe trade depression, the L.M.S. Railway have continued to pursue a progressive policy in relation to the ports under their management.

At no time in their history have the railways generally been better equipped to deal with traffic than they are to-day. When the earnestly looked for revival comes, the port modernisation and extension schemes already carried out, or in progress, will enable them to cope with whatever volume of traffic may then be offered, with an ample margin for expansion.

Whilst recent years have seen ambitious schemes carried out at the L.M.S. English ports, it is in Scotland that the main activities of the year 1930 have been concentrated. At the Scottish Coal Shipping Ports of Ayr, Troon and Grangemouth schemes have been put in hand or authorised for the improvement of the machinery and equipment, the deepening of an existing berth and the provision of additional siding accommodation for wagons.

The modernisation scheme at Ayr, which serves the rapidly-developing South Ayrshire Coalfield, includes the provision of three electrical belt conveyors designed to load cargo, coal, or bunkers much more expeditiously than can be done by the existing appliances. Several old hydraulic cranes for general cargo will be replaced by electrical luffing cranes of 3 and 5 tons capacity, and the scheme also provides for a substantial addition to the siding accommodation for wagons. The estimated cost of the whole of the new works totals some £100,000.

Grangemouth has achieved the reputation of being the best equipped railway-owned port in Scotland, as well as being the largest. At this port it has been decided to replace several hydraulic hoists at the Carron Dock by two electrical belt conveyors and to adapt a high capacity electric coaling crane at the Grange Dock to enable it to deal with 20-ton wagons.

A new deep-water berth, situated at the East Breakwater at the Port of Troon, is to be dredged to a sufficient depth at all states of the tide, to accommodate vessels taking coal cargoes up to 7,000 tons. An electrical belt conveyor will be installed at this new berth.

Two electrical belt conveyors are being erected at the L.M.S. Railway's wharf at General Terminus Quay on the River Clyde, Glasgow, in place of old steam coaling cranes.

At Swansea, a belt conveyor will replace the existing hydraulic hoist at the Prince of Wales Dock and a 30-ton hydraulic hoist at King's Dock will be fitted with a "Hand-cock" anti-breaking appliance, necessitating the strengthening of the hoist and crane thereon being constructed to take a 7-ton lift when the anti-breaker is in use.

When working at a maximum capacity each of these nine conveyors will deliver coal into the holds of suitable vessels at 700 tons an hour. They will be of the most modern type and designed to deal with 20-ton wagons.

Electric capstans will draw the loaded wagons on a slight up-gradient to a tipping table which will tip them sideways, the contents passing over a steel apron into a hopper, and thence to a moving belt terminating in a telescopic delivery arm working vertically in the holds of vessels. This arm is capable of lateral movement, and also of being lifted sufficiently high to deliver directly into bunker hatches in the superstructure of a vessel. It can be extended to admit of coaling thwartship bunkers or reaching beyond the centre line of large holds in vessels of wide beam.

The mobility of the delivery arm will enable coal to be distributed within the holds, materially facilitating trimming and obviating a good deal of wasted time ashore occasioned by the necessity for the slowing down or stopping of tipping altogether, whilst the trimmers aboard carry out their work.

In view of the importance now attached by exporters to the necessity for the prevention of breakage of cargo coal during shipment several of the conveyors are to be equipped with specially-devised anti-breaking apparatus which, when attached to the end of the delivery arm, will form a part thereof, and ensure coal being carried steadily, in the case of small and medium-sized vessels, to the bottom of the holds and, in the larger vessels, to within a few feet of them; the delivery arm being telescopic and movable will keep pace with the level of the cargo as it rises in the holds to the level of the hatchways, thus reducing the possibility of breakage to a minimum.

After wagons of coal have passed over the tipping tables they will gravitate over a down grade to sidings, in readiness for returning to the collieries.

Additional weighing machines for weighing the wagons both when full and empty are included in the schemes, the existent siding accommodation and increasing it to ensure the conveyors being fed at a speed commensurate with their quicker delivery capacity in relation to the present coal appliances.

Conveyors of the type mentioned above can be so constructed that the tipping of coal from wagons can be done at any convenient place at the rear of quays, the coal being carried by the belts at such a height as to clear intervening obstacles or quayside roads on which stoppages frequently occur when wagons are crossing them on the level when passing to or from hoists or cranes. Moreover, the latter appliances which lift loaded wagons bodily are necessarily of heavy construction and their position, which must be as near as possible to the quayside edge, imposes a heavy stress on the quays, a feature which does not obtain to anything like the same extent in the case of conveyors, the quayside structure in connection therewith being of relatively light construction, an important feature from the dock engineer's point of view.

Although the substantial total of 7,000,000 tons of coal, that annually passes through L.M.S. ports falls short of that shipped through the more favourably situated North-East Coast and South Wales ports, the L.M.S. Railway having already spent large sums of money in improving their ports for handling traffic other than coal, have now set aside the further considerable amount of £207,000 in the interests of coal traffic. The railways have embarked on this improvement scheme in the earnest hope that the expenditure will be beneficial to the British Coal Exporters, the Shipping Companies and themselves.

Whilst these considerable improvements are being undertaken at the large L.M.S. ports, the smaller properties have not been overlooked. At Poplar Docks, London, seagoing vessels carrying up to 1,800 tons of cargo can be dealt with. Two berths have recently been reconstructed and equipped with 7 new electrical luffing cranes of 40 cwts. and 5 tons capacity. Sidings alterations have been effected and an electrical wagon traverser installed to facilitate the working of wagons to and from vessels at the berths.

For the speedier discharge and loading of Thames barges, the cranage equipment at the barge berths has been augmented by an electrical 50-cwt. transporter crane, which transfers goods direct from barge to warehouse and vice versa, and a 50-cwt. electrical general cargo crane. These docks immediately adjoin Poplar L.M.S. Goods Station and are thereby placed in direct communication with the L.M.S. main line.

At both Garston and Fleetwood the extensive modernisation schemes are rapidly approaching completion. At the former port, amongst other improvements, four electrical 7-ton luffing grab cranes have been brought into full use and have proved their ability to speed up the discharging of ores and other minerals and in facilitating the turn-round of vessels.

The work on the £100,000 Fleetwood scheme will, it is estimated reach a final stage early in 1931.

Tenders Invited

Pilot Boat for Constanza Marine Port Department, Roumania

The Commercial Secretary to H.M. Legation at Bucarest reports that the Roumanian Bulletin of Ports and Waterways for April publishes a call for tenders issued by the Constanza Marine Port Department, for a pilot-boat 16 to 19 metres long, fitted with two Diesel engines.

Offers must be entered on the legal stamped forms. The date of delivery should be mentioned. Price should include all installation and plant and should be for the vessel ready for service.

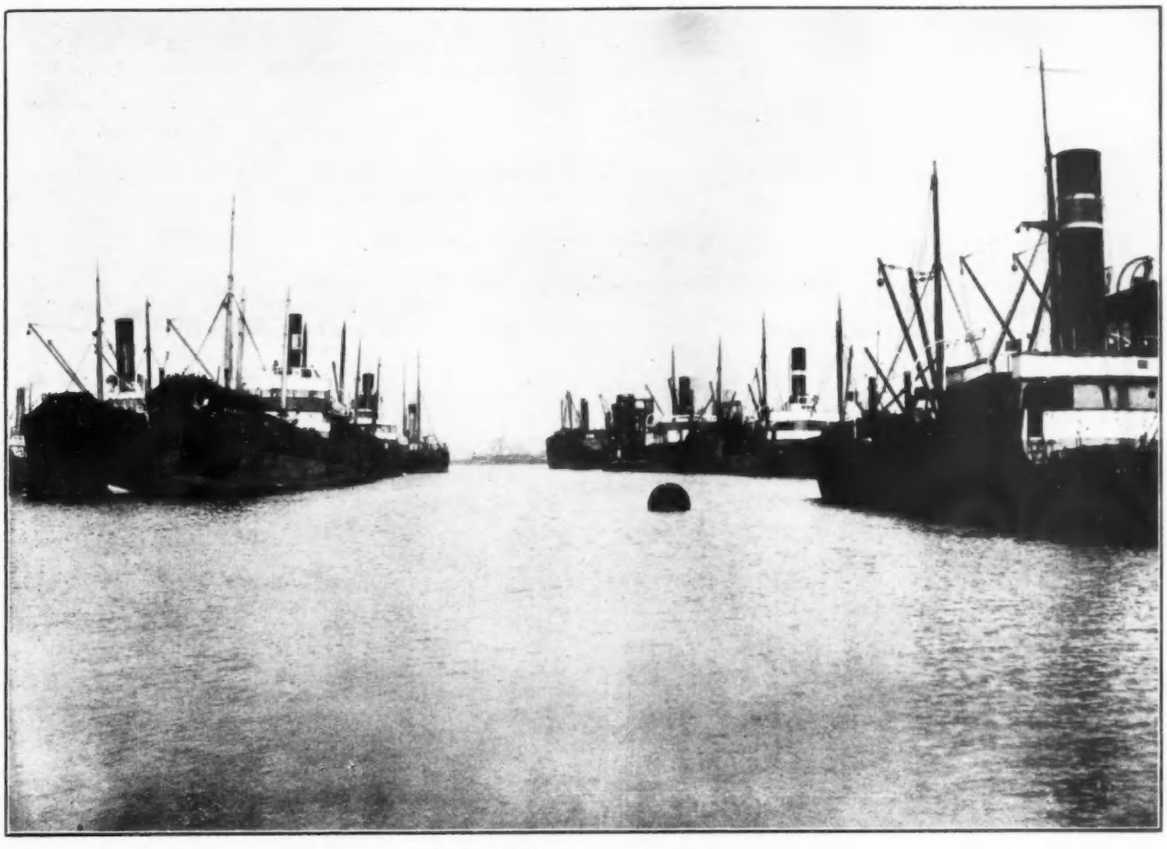
Upon payment 10 per cent. will be reserved as a guarantee for the good performance of the boat and this will be paid when it is finally taken over.

Offers will be considered only from specialists in naval construction or their legal representatives. A deposit of 5 per cent. is required with the offer, the receipt for which from the "Caisse des Depôts" or the Financial Section of the Ports Department should accompany the offer. Successful tenderers must increase the guarantee to 10 per cent. *ad valorem*.

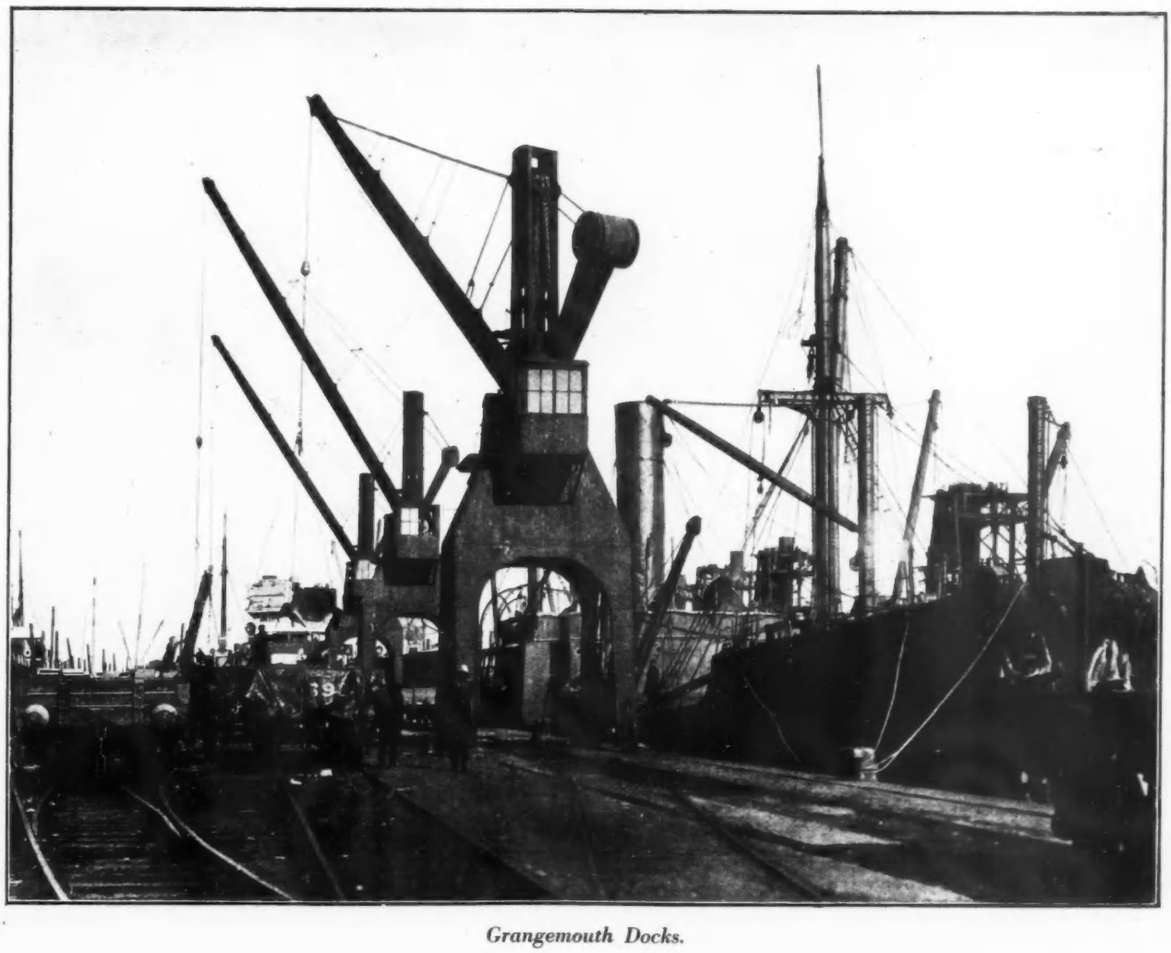
The above is all the information which is available on the subject.

A notification to the Department of Overseas Trade of any action which firms may take will be appreciated.

London, Midland and Scottish Railway Company's Ports



View of Grangemouth Docks.



Grangemouth Docks.

Notes from the North

New Dock Power Station.

CLARENCE DOCK POWER STATION of Liverpool Corporation is rapidly approaching completion, tests having been already made of the River Mersey water supply, that will serve the station in the condensation of exhaust steam. The huge water-cock is situated on the river wall above the sluices constructed for the admission of river water to the condensers at the station, which is near the river front and the water is conveyed through a lofty subterranean vault and pipes. Each condenser at the station will take 2,200,000 gallons of water per hour and the feed pumps returning the condensed steam to the boilers, will train it by means of rotating screens.

Manx Harbour Works.

Sir Leopold H. Saville, Civil Engineer-in-Chief at the Admiralty, visited Peel, I.O.M. recently in company with Mr. W. H. Blaker, of the Isle of Man Harbour Commissioners, to inspect the recent harbour improvements.

Levers' £980,000 Dock.

At the thirty-seventh annual meeting of the shareholders of Lever Bros., Ltd., held at Port Sunlight, Mr. Francis D'Arcy, the chairman, in a reference to the new Bromborough Dock, said "The dock has been constructed at a cost of £980,000 and we consider that it will prove to be a valuable asset to the company, as it will afford every facility for the development of our import and export businesses."

Seacombe Ferry Staging Accident.

During the construction of a new bridge, part of the Seacombe Ferry improvements, members of the engineering department fell from a platform, which it has been suggested, was rendered unsafe by the somewhat mysterious removal of safety clip bolts. One man was killed. A number of men at the time were standing on two planks on bearers suspended from hooks, and the hangers were passed through the main deck. These were secured by a cross piece on the top of iron girders and the hanger itself was held by a nut at the top. Then an order was given to let go a hanger. The men all went down below on to the temporary stage, and it occurred to them that the removal of the hanger would endanger the stage. A few minutes after this, the staging collapsed with the unfortunate result indicated. At the inquest one witness, the foreman, said that if the safety clip bolts had been there, as he thought they were, the staging would not have given way when the nut had been loosened. The clips had been taken away, but he did not know by whom they had been taken and he had given no one authority for doing so. He had since made every effort to find who had moved them but had been unsuccessful.

How Tides are Predicted.

In the monthly magazine of the Mersey Docks and Harbour Board there is an interesting article by Mr. A. C. Tennant of Wallasey who was formerly the tide gauge superintendent in the service of the Mersey Docks and Harbour Board. It is essential to safe navigation and to the surveys of the channels and sandbanks of Liverpool Bay and the Mersey, which are in daily operation, he says, that the water level to be expected at any location and at all times shall be ascertainable and while, by reason of variable meteorological influences on the tides, absolute accuracy of prediction cannot as yet be depended upon, scientific research has been productive of a remarkable approximation to actuality under, what may be termed normal weather conditions. In Bidston Observatory there has been installed a sort of robot prophet of the tides in the form of a predicting instrument by means of which may be delineated on a roll of paper, a series of curves representing to a time and height scale, the variations in tidal water level at the Liverpool landing stage for a year, in advance of occurrence. The recognition by the Mersey Docks and Harbour Board and Liverpool shipowners of the value of scientific tidal research work led to the establishment of the institute as a section of the University in March, 1919. Funds for the purchase of the tide predicting machine were provided by Messrs. Alfred Holt and Co., the Cunard, Booth and Orient Steamship Companies, Mr. C. Livingston, Mr. T. Harrison Hughes and by the Local Committee of the British Association meeting in 1923. The Governing Committee is nominated by the University Council and the Mersey Docks and Harbour Board, included in the latter being the Board's general manager and secretary, Mr. L. A. P. Warner and Capt. F. W. Mace, R.N.R., the Marine Surveyor and Water Bailiff. The Tidal Institute, which was incorporated with the Bidston Observatory in January, 1929, is now well established as a recognised bureau of information concerning tidal matters, and is constantly engaged in the prosecution of scientific research work pertaining thereto.

Laxey Sea Wall.

The Laxey (Isle of Man) sea wall which is the basis of a new promenade scheme is now completed. Previous to the execution of this work the foreshore in shape was very irregular. The finished work consists of a new sea wall extending the full length of the promenade, constructed on top of a strong solid sloping under-structure, unusual in design. The whole is built of concrete and the complete stretch of walling is ornamented by infixed pillars. Steps for access to the shore are provided at intervals and there are also two cart-ways.

Retirement of Mr. C. J. Hobbs.

Mr. Charles James Hobbs who retired from the position of manager of the Hydraulic Engineering Co., Chester, with which business he became associated in January, 1898, has seen the carrying through of many important contracts in connection with dock construction work. Immediately upon becoming general manager of the company in 1906, he was responsible for carrying out, extending over 4 years, the provision of 8 sets of hauling machinery for the caissons of H.M. Dockyard at Keyham and machinery for 3 sets of floating caissons, together with the installation of 15-in. air mains and valves around the docks at Keyham. Then came the equipment of the new Garston Dock extension for the London and North-Western Railway Company, with sixteen 50-cwt. cranes and two 4-ton cranes, four 30-ton coal hoists and forty-two capstans, and also one 30-ton coal hoist and capstans for the London and North-Western Railway Company at Swansea; Bascule bridge machinery for the North-Eastern Railway Company at Whitefriars Bridge, Hull; complete equipment of the new hydraulic power station at Manchester, with pumping engines, accumulators, coal transporter, etc.; and the supply of pumping machinery and hydraulic lock-gate machinery for the Aire and Calder Navigation Co. And so the work has gone on year by year. Mr. Hobbs was for many years principally concerned with steam-driven pumping machinery, but the company have for a number of years been developing electrically-driven installations. In addition to the work done on behalf of railway companies, Mr. Hobbs on behalf of the Hydraulic Engineering Company, was responsible for the carrying through of contracts for the King George's Dock at Hull, the Manchester Corporation, the Newport and Cardiff Docks, Messrs. Babcock and Wilcox. Work done by this company has included the supply of gate machinery for the Hornby and Gladstone Dock Entrance, Liverpool, adjoining what was 10 years later the Gladstone Docks, for which the company also supplied the dock gate machinery.

River Models in Concrete.

Of interest to dock engineers, are the two models which are being used at the engineering department of the Manchester University to test the effect of tides on the beds of the Rivers Mersey, Dee and Humber. Designed to a scale of 9-in. to the mile, the models are constructed of concrete and resemble in exact miniature about 30 miles of the Humber below Goole, and the Mersey, with the Wirral Peninsula and part of the Dee, from Warrington to the sea. The engineering department of the Manchester University is making a particularly interesting experiment much on the lines, we understand, of one which has been made by the Mersey Docks and Harbour Board. A model of the River Humber has been made to scale and all the influences which will affect the bridge have been reproduced, so that in a year, the state of the river 500 years hence will be known. The experiment has been going on for a few weeks and will not be completed for some time. The Humber model is about 25-ft. in length. The bed is composed of sand and at the beginning of the experiment exactly resembled the bed of the Humber. At one end the tributaries, the Ouse and the Trent, enter the Estuary. They contain the right proportion of silt and now, that silt has formed on the bed of the Humber. The tides which are worked out in perfect precision—to scale of course—are controlled by an electrical automatic apparatus. The time between the tides is 87 seconds. Instead of salt water, ordinary water in which alum has been dissolved, is used to give the correct salinity. It is suggested that the object of the experiment is to ascertain whether the building of a bridge over the River Humber would be to the detriment of navigation or would alter the bed of the river, so as to affect the ports of Hull and Goole. The sea at the mouths of the Rivers Humber and Mersey is simulated by a deep tank, in which a hollow vessel is forced up and down. The resulting displacement causes the "tide" to ebb and flow. As the tides continue, a system of gearing causes them to vary in height, just as the moon affects natural tides. Electric fans imitate the prevailing winds.

Notes from the North—continued

Manchester Ship Canal.

The monthly return of the Manchester Ship Canal Company shows that, as compared with last year, there was another decrease in April in the traffic receipts, the figures being: 1931, £90,939; 1930, £96,773. The total decrease for the first four months of this year is £49,844 against the figures of 1930. An important footnote to the traffic return states: "The recent railway wages award has been applied to the company's clerical staff and railway workers and reductions in salaries of the supervisory staff have been made on the same scale as in the case of railway companies. In addition, short time working has been put into operation in certain departments. The chairman and directors have themselves made a voluntary reduction in their fees equivalent to 18 per cent."

New River Mersey Bridge.

Estimated to cost £48,375, the new bridge which is to be built to cross the River Mersey at Warrington, is really part of a scheme to alleviate the heavy road traffic of the town. The bridge is to be built with two arches, each with a span of 86-ft. with a central pier 8-ft. wide, making a total span of 180-ft. The roadway will be 60-ft. wide between the parapet walls, with a carriageway of 36-ft. and two footpaths each 12-ft. wide. The construction is to be in ferro-concrete and this will be faced on the outside with a suitable stone. The parapet balustrade will be carried out in the same stone. The tender of Messrs. Bolton and Lakin, Ltd., of Birmingham, has been accepted for the bridge and approaches. It is estimated that the work will be carried out in 20 months from the date of commencement. It is specified in the contract that all materials must be of British manufacture, including the steel. Mr. H. W. Fitzsimmons, of Messrs. Webster and Fitzsimmons, 39, Victoria Street, London, is the engineer for the bridge work.

Fleetwood's Valuable Deposits of Gravel.

Sand and gravel deposited on the Fleetwood seashore by the tide are providing one of the town's most valuable assets. The tides of Morecambe Bay deposit immense quantities of gravel on the foreshore at Fleetwood, and the Council some years ago purchased the foreshore rights from the Duchy of Lancaster and thus obtained control of the gravel. Through the sale and use of gravel, a model yacht pond, the largest in Great Britain, and a commodious boating lake have been hollowed out of the beach. The gravel excavated has been sold while a considerable portion has also been used for making banks. This year the profit from the sale of gravel is estimated by the chairman of the Fleetwood Development Committee to exceed £4,500 and in fact the town may look forward to a revenue of something like this amount for many years to come. There is an unending supply.

Progress of Mersey Tunnel Works.

Within the next few weeks it is probable that an announcement will be made of the opening date of the new Mersey Tunnel. An amount of £2,876,000 or 89 per cent. of the total amount of £3,217,951 provided for the four contracts now being executed, has been expended to date, according to the report of the engineers submitted to the May meeting of the Joint Tunnel Committee. On the Birkenhead side, 95 per cent. of the value of the contract has been expended and 99.9 per cent. of the excavation completed. The construction of the reinforced concrete roadway is practically complete and the filling with concrete of the cast-iron segment is proceeding. On the whole of the tunnel works, 850 men are in employment. For the ventilation of Mersey Tunnel, plant is being installed to ensure the intake exhaust of four million cubic feet of air per minute. Mr. B. H. M. Hewett, the engineer-in-charge in a lecture at Liverpool explained there would be six ventilating stations—three on each side of the river, and each dealing with a different section. On the assumption that the tunnel was full from end to end of motor cars, the fresh air to be delivered and foul air exhausted, would reach the big volume of 4,000,000 cubic feet per minute. As the result of experiments it had been found that the best method would be to blow the fresh air into the duct underneath the roadway and exhaust it through the space above the roadway. To let the air pass from the main ventilating duct into the main traffic space of the tunnel, there were ports or openings at close intervals, leading into an expansion chamber formed over the kerb, so that the air would flow into the tunnel in exactly equal volume for every foot of length. When the full 4,000,000 cubic feet per minute was being delivered, the air would pass through the main duct at 40 or 50 miles an hour. The new tunnel would be, if not entirely watertight, so nearly watertight that the amount of pumping required would be comparatively insignificant. When the Mersey Railway Tunnel was constructed, the system of cast-iron lining had not been formulated, and they were obliged to line the tunnel with brickwork, which could not be made watertight.

Woodside Ferry Approach, Birkenhead.

Birkenhead Ferries Committee has under consideration the suggested layout of Woodside Ferry approach. Sir Henry Maybury, the famous transport expert, has been invited to come to Birkenhead to advise upon various schemes, and it is thought that advantage might be taken of his visit to secure his opinion regarding the treatment of the ferry approach.

New Tug for Ribble.

The Ribble Committee of the Preston Town Council which is responsible for the administration of the dock estate, has purchased a new screw tug to replace the wrecked "Enterprise," at a cost of £9,275. The petrol tank section of the Ribble is increasing and if it had not been for this department the dock undertaking would have been in a far worse position than it is to-day. Two firms are substantially increasing their plant.

Quick Cargo Clearance.

At a recent meeting of the Mersey Docks and Harbour Board, the chairman of the Warehouse Committee stated that the Board had received a very appreciative letter from the agents of the steamer "Ovington Court" in regard to the excellent work performed in connection with the discharge of a part cargo of 5,278 tons of Australian wheat in bags from the vessel at the Board's grain warehouses, Birkenhead. The time occupied was 22 working hours and the average rate of discharge was 240 tons per hour.

Rail-hauled Locos on Dock Estate.

Railway engines are now railed on to the Liverpool Dock Estate for shipment abroad. Hitherto these locomotives owing to differences in gauge, have either been sent in parts from the constructing works and assembled at the docks or have been transported bodily by special road services, but a new railway truck has now been constructed to facilitate movement from Earlestown and Derby works. It took some two hours to cover the short journey from Earlestown to Alexandra Dock Station, Liverpool, and crowds watched the intricate journey from the station to the docks beneath the Liverpool Overhead Railway. Being on a suspended span, each curve in the railway line meant "bellying" in the load, and officials kept a careful eye that there was no collision with overhanging structures. The engine was safely brought to the dock sheds and then began the unloading with a "ramp." The engine is the first of 17 for shipment. At the docks skill is required when the locomotive is gradually removed from the tractor by means of special bogies. No cranes are required at the docks by the new arrangement except when the engines are slung aboard ready for shipment.

Most Efficient Grain Plant in the United Kingdom.

In order that the grain trade might have the benefit of the most rapid and up-to-date form of discharge at the docks on the Liverpool side of the River Mersey, the Grain Storage and Transit Company assisted by the Liverpool Corn Trade Association, arranged with the Mersey Docks and Harbour Board for a new berth at the Alexandra Dock. This berth, states the annual report of the Liverpool Corn Trade Association, has been equipped in connection with the company's silos with the most modern plant. The directors congratulated both the company and the Dock Board on what they had achieved, for there was no doubt that from the point of view of the shipowner who rightly wishes to see his vessel discharged with the utmost rapidity, and from the point of view of the cargo owner who required to have his grain handled swiftly and at the lowest possible cost, the new berth was one of the most efficient in the United Kingdom.

Ship Canal Traffic Comparisons.

According to the annual statistical returns of the Manchester Ship Canal Company, recently submitted to the Manchester City Council, the total expenditure on capital account has advanced from £18,675,660 in 1925 to £19,975,522 in 1930. Here is a summary of the toll-paying merchandise traffic and the receipts over a period of 37 years, during which the Ship Canal has been open for traffic:—

Year	Sea-borne Traffic	Barge Traffic	Total	Ship Canal Tolls, Ship Dues, and Miscellaneous Receipts
	Tons	Tons	Tons	£
1894	686,158	239,501	925,659	97,901
1895	1,087,443	271,432	1,358,875	137,474
1905	3,993,110	260,244	4,253,354	449,436
1915	5,115,954	318,092	5,434,046	757,268
1919	3,313,620	275,423	3,589,043	1,203,361
1925	5,622,405	259,286	5,881,691	1,493,544
1926	6,533,780	297,099	6,830,879	1,592,219
1927	6,099,636	259,784	6,359,420	1,576,237
1928	6,021,316	235,579	6,256,895	1,517,018
1929	6,344,005	214,584	6,558,589	1,528,784
1930	6,094,719	195,906	6,290,625	1,395,567

Notes from the North—continued

Dock Board Entertains Overseas Visitors.

To study the facilities of the Port of Liverpool for the handling of South African goods and produce, and also to confer with the shipowners and merchants as to the possibility of direct shipments to Liverpool, The High Commissioner for South Africa (the Hon. Charles T. te Water), with his trade commissioner (Mr. Diamond), visited Liverpool recently as guests of the Mersey Docks and Harbour Board. Under the direction of Mr. L. A. P. Warner, C.B.E. (general manager and secretary), and Colonel T. H. Hawkins, C.M.G. (principal assistant to the general manager), they visited the Gladstone system of docks, the Birkenhead lairages and other parts of the dock estate which has facilities for handling South African produce. Speaking at a banquet given by the chairman of the Mersey Docks and Harbour Board, Sir John Sandeman Allen, M.P., declared that the Mersey Docks and Harbour Board was one of the finest public bodies in the kingdom, so much so that the Port of London Authority was framed on its lines and experience. In Liverpool they knew how much they owed to the body which managed their port. He ventured to say to the High Commissioner that the base of their operations should be to Liverpool because it was the door into the most industrial part of this country and the most populated.

Over 14 Million Tons pass over Liverpool Quays.

One of the greatest warehousing organisations in the country is that of the Liverpool Warehousing Company, whose establishments, several hundred of them, are located in a line parallel with the Liverpool Dock Estate. At the last meeting of the 1930-31 session of the Institute of Transport, Mr. H. Gaunt, managing director of this company, gave a lecture on warehousing which was followed by a piquantly interesting discussion, in which many members participated, on the future of the warehousing industry having regard to the great developments that have taken place or are pending in the transport world. More than one speaker said the Government did not give the warehousing industry the recognition it deserved, since it was a bulwark against famine and want, in times of national emergency. The suggestion was made that the industry should be subsidised by the Government. Mr. H. Gaunt said that in 1821 a Commissioner was sent from London to report on the Customs and Excise in the Port of Liverpool, and it was then strongly recommended that a similar system of docks and warehouses should be established as in London. So well were many of these old warehouses built, that there are to-day a few 100 years old serving the purpose for which they were originally built. Modern hoisting machinery has been introduced into these old-time structures bringing their efficiency up-to-date. Valuable space at the dock side, said Mr. Gaunt, is continually needed for incoming cargo and it is often found that traders endeavour to use quay space for storage. This practice is penalised by the Mersey Docks and Harbour Board by imposing fines and penalties, if the goods are not removed from the quay within 72 hours of being landed. It would be impossible for transport to run smoothly if traders were allowed to create piles of goods on the quays. The facilities on the Liverpool quays are really good; plenty of berths for vessels and excellent facilities to assist unloading, weighing and final delivery to vehicles, but this requires a lot of free space, therefore, transport has to be highly efficient for swift removal to rail, canal, coastwise or foreign steamers, warehouse an/or road transit. The weight of merchandise on which dues were paid to the Mersey Docks and Harbour Board in the year ending 1st July, 1930, was 14,282,000 tons. Of the imports approximately 70 per cent. went into public warehouses. Liverpool quays were practically for transport and not for storage, that function being discharged at the warehouse. Mr. Gaunt then commented on the interference with transport in the dock area of Liverpool caused by the enforcement of the Road Traffic Act. It was not fair, he said, that vehicles should be restricted to certain unreasonably low weights when the roads in the Liverpool dock area were made to carry weight and have stood up to their work for years. He suggested that all wagons with special privileges over the dock area should be painted an exclusive colour, so that if they passed outside the city area, they could be immediately detected. In conclusion, Mr. Gaunt said " With these days of rapid motor transit I cannot see the warehousing business at such ports as Liverpool falling away, although ' To Let ' notices displayed on railway warehouses at inland towns makes one think their prosperity is diminishing."

New Mersey Dock Bridges.

Work has commenced on the construction of three more bascule bridges at the Birkenhead Docks. The east roadways of the Alfred (A), Wallasey (C), and Egerton (D), Bridges, connecting Birkenhead with Seacombe, have been closed for traffic, consequent upon the construction of the new bridges for a period of about three months, to be followed by the closing of the west roadways when the work on the east roadways has been completed. By arrangement with the Mersey Docks and Harbour Board, and other authorities concerned, the Automobile Association has erected its customary loopway signs to divert traffic via Duke Street Bridge. Correspondence which has passed between the Mersey Docks and Harbour Board and the Birkenhead Chamber of Commerce on the question of abolishing the Poulton Penny Bridge tolls now that the four bridges across the docks between Birkenhead and Seacombe are being replaced by bridges of the bascule type, has been made public. Arrangements have been made for the east roadways of the four new bridges to be closed for a period of three months to be followed by the closing of the west roadways when the work on the others had been completed. A bell has been erected on the north side of bridges " A," and " D " with a flag or signal arm for the day time and alight for the night time to be worked by the police who will also control the traffic passing over the bridges. The Chamber suggested that the Wallasey Pool bridge between Birkenhead and Poulton should be entirely freed from tolls, as the general interference and diversion of traffic which would result during the carrying out of the undertaking would have a very disturbing influence on dock trade and dock and other transport between the boroughs of Birkenhead and Wallasey. These circumstances, together with the fact that the new coal elevator, which would be in use by the end of June, might interfere with the free passage of traffic over the Duke Street bridge, the Works Committee of the Dock Board after carefully considering the situation, decided that in view of the fact that at the present time the bulk of the traffic was passed over the Duke Street bridge, they did not anticipate under present trade conditions, that serious congestion of traffic would be caused by the closing of one track over the four bridges in question, and consequently could not see their way to recommend the Board to accede to the request. It was not thought that the new coal conveyor would cause additional interference with the passage of traffic over the Duke Street Bridge. The Birkenhead Corporation have requested, and the Wallasey Corporation have agreed to, a joint meeting being held to consider what steps may be taken to free the Mersey Dock Boards' Poulton bridge from tolls. A conference is to take place at an early date when representations to the Mersey Docks and Harbour Board will be made urging the Board to abolish the tolls.

Bombay Port Trust

At a meeting of the Trustees of the Port of Bombay, held on 21st April, 1931, the following were the main items of business disposed of:—

An application from Mr. G. L. Winterbotham for leave of absence from the meetings of the Board from 4th April to 30th November, 1931, was sanctioned, and the election of Mr. W. G. Lely as a Trustee *vice* Mr. Winterbotham was recorded.

The preliminary report on the Revenue Receipts for the year ending 31st March, 1931, was considered. The actual collections amounted to Rs.249.25 lakhs, a decrease of some Rs.32 lakhs as compared with the corresponding figure for the previous financial year. It is expected that the result of the year's working will be a deficit of between Rs.13 and 14 lakhs as against the deficit of Rs.15½ lakhs anticipated when the revised estimates were framed in January last.

An expenditure estimated at Rs.2,47,170 was sanctioned for maintenance and renewals of rails and sleepers on the Bombay Port Trust Railway during 1931-32.

At a meeting of the Trustees of the Port of Bombay held on the 5th May, 1931, the following were the main items of business disposed of:—

The Board sanctioned an estimate of Rs.19,000 for additional monsoon protective measures at the Ryan Grain Market, consisting of roofing the four open passages between the godowns, raising the concrete entrance sills by about 1-ft., providing steps and making suitable alterations to the drainage arrangements to avoid flooding at times of heavy rainfall.

An estimate of Rs.9,000 for repairs to the roofs of certain of the storage sheds at Grain Depot was approved.

The quotation of the Burmah-Shell Oil Storage and Distributing Co. of India, Ltd., for the supply of 200 tons Spramex for road surfacing work during 1931-32 was accepted.

The following leases were granted:—

A plot of land about 627 square yards at Apollo Reclamation to the lessees of the adjoining plots, for private garden amenities, at half the sanctioned rates for building areas.

A 5-year lease of plot of land (area about 8,300 square yards) at Reay Road to Mr. Siddick Mahomed for accommodation of a labour camp hitherto let on monthly tenancy.

A 50-year renewal of leasehold Rent Roll No. 759 (area about 1,082 square yards), Argyle Road, Elphinstone Estate, on revised terms, for godowns and shops with offices and residences above.

The Port of New York

Latest Data issued by the Bureau of Commerce

Union Inland Terminal.

THE Union Inland Terminal to be constructed by the Port of New York Authority, and for which ground was officially broken on April 30th, will occupy the block bounded by Eighth and Ninth Avenues, 15th and 16th Streets, and will be the first of a projected system of such freight centres. It will be ready for occupancy on or about March 1st, 1932.

The terminal will provide less-than-carload facilities to be used by the following trunk line railroads: Baltimore and Ohio; Central R.R. of N.J.; Delaware, Lackawanna and Western; Erie; Lehigh Valley; New York, New Haven and Hartford; New York Central, and Pennsylvania.

In the terminal building the trunk line carriers will establish and operate a union inland freight station through the medium of an organization to be selected by them and to act for all of them, and will specify said station in their tariffs as a freight station for the receipt and delivery of less-than-carload freight at their respective tariff rates.

The carriers further agree not to subdivide the station between individual carriers or groups of carriers in so far as shippers and consignees are concerned. The charges which the carriers shall make for the transportation services rendered or to be rendered in connection with the operation of said station shall be the charges provided for in their respective tariffs as duly filed with the Interstate Commerce Commission.

Inbound freight will be unloaded at the rail terminals, and then carried by the carriers' motorized equipment to the terminal, where it will be sorted and classified for delivery to consignee. The carriers' trucks, when they have completed deliveries, will call at the shipping berths in the terminal for their return loads. This operation has been aptly likened to the Government's post-office method of sorting and distributing mail. For outbound freight, the shipper in Manhattan may deliver freight to all railroads by merely making one delivery to the terminal.

Grain Exports Gain.

Total exports of grain, including both domestic grain and Canadian grain in transit, during the month of February, 1931, increased 52 per cent. over the corresponding period in 1930.

	February 1931 Bushels	February 1930 Bushels	Net Change Amount	Net Change Per cent.
Through the Port of New York—				
Domestic and Canadian Grain	5,474,000	3,608,000	+1,866,000	+51.7
Domestic Grain	91,000	276,000	— 185,000	—67.0
Canadian Grain	5,383,000	3,332,000	+2,051,000	+61.6

Commerce at Port Newark.

Receipts of lumber at Port Newark during March, 1931, amounted to 15,091,000 board feet, 24 per cent. below the amount received in March, 1930.

There was, however, a gain of 177 per cent. in receipts of cargo other than lumber, over the same period last year. The volume in March, 1931, was 21,339 tons as against 7,694 tons in March, 1930.

The number of steamers, lighters and barges discharging at Port Newark during the month was 36, as against 27 in the same period last year.

Ship Repair and Dry-docking at the Port of New York.

When an ocean ship limps into the Port of New York, buffeted by storms at sea, or damaged by collision, there are more than a dozen ship repair yards ready to put her in shape again. If the ship is damaged only above the waterline, repairs are often made alongside her regular dock. Emergency repair jobs in replacing ships' plates bent and torn in collision have been completed in as short a time as fifteen hours, the vessel proceeding to sea immediately thereafter.

For ships requiring drydocking for repairs to hull, rudder, or screws, or an annual barnacle scrubbing, there are drydocks in the Port of New York which can accommodate all but thirteen of the largest vessels afloat. Within the Port are more than 50 floating docks, 2 commercial graving docks, and 4 Navy Yard graving docks. Six of the floating docks take large ships from 10,000 to 27,000 tons. The largest commercial graving dock can take ships up to 731-ft. in length. The 4 graving docks at the Brooklyn Navy Yard, the largest of which takes vessels of 694-ft., can be used in emergency by merchant vessels when no commercial drydock is available.

Some of the large ships recently drydocked in New York Harbour are the George Washington, 699-ft. long, tonnage 23,788 the Vulcania, 631-ft. long, tonnage 23,970; and the America, 669-ft. long, tonnage 21,329.

Most of the drydocks in New York Harbour are located on the Brooklyn waterfront in the neighbourhood of Gowanus Bay and Erie Basin, and on the Hoboken-Weehawken waterfront. There are also plants on the north shore of Staten Island, and on the Hackensack River. The majority of the larger yards are operated by the Todd Shipyards Corporation and the United Dry Docks Inc. Other operators are Ira S. Bushey and Sons, Union Dry Dock and Repair Company, and the Federal Shipbuilding Co.

Despite the excellence of its equipment for the repair of large and small ships the Port of New York still lacks a drydock capable of handling the largest superliners of the Leviathan, Majestic, Mauretania, Bremen and Europa class. The volume of business for such a drydock appears to be insufficient to make it commercially self-sustaining. Guarantees by steamship companies and/or a Governmental subsidy are apparently needed.

Steamship Passenger Traffic.

The number of passengers travelling abroad via the Port of New York in February, 1931, was 12 per cent. less than the same month last year. The severe visa restrictions have cut down immigrants to only 1,880, probably the smallest number to arrive at the Port of New York in any month since the Immigration Department started functioning.

Outside of immigrants the passenger traffic equalled last year's figure.

	February 1931	February 1930
INBOUND—		
Aliens—Immigrant	1,880	8,828
Non-Immigrant ...	5,406	6,339
U.S. Citizens	11,477	12,649
Total ...	18,763	27,816
OUTBOUND—		
Aliens—Emigrant	2,889	2,123
Non-Emigrant	12,262	9,864
U.S. Citizens	16,855	18,027
Total ...	32,006	30,014
Total—Inbound and Outbound ...	50,769	57,830

Vessel Movements in Foreign Trade.

The number and tonnage of vessels entered and cleared in foreign trade at the Port of New York during March, 1931, while slightly greater than the previous month, are below those of the same period last year.

	March, 1931 No. of Vessels	March, 1931 Vessel Tonnage	March, 1930 No. of Vessels	March, 1930 Vessel Tonnage
Entrances ...	494	2,396,654	564	2,562,043
Clearances ...	489	2,323,422	576	2,524,972

Warehouse Space in the Port of New York.

Warehouse facilities for handling foodstuffs and general merchandise both for export, import and domestic distribution, continue to expand in the Port of New York. A recent survey by the Port of New York Authority shows that the total space devoted to general merchandise storage was 28,875,000-ft. on January 1st, 1931, as compared to 26,967,000-ft. on May 1st, 1929. The cold storage capacity has also been increased by the addition of several modern structures.

The floor area in the various sections of the Port District is itemized below. These statistics do not include warehouses devoted exclusively to storing household goods, which are estimated to include more than 7,000,000-ft. of additional space.

Public Storage Warehouses in the Port of New York District
(As of January 1st, 1931)

Location by Districts	All Classes Floor Area in Sq. Feet	General Merchandise Floor Area in Sq. Feet	Cold Storage Floor Area in Sq. Feet
Manhattan	9,420,642	7,200,025	2,220,617
Bronx	1,015,273	839,273	176,000
Brooklyn	12,045,316	11,497,316	548,000
Queens	168,500	168,500	—
Staten Island ...	2,423,117	2,423,117	—
Westchester County	134,950	134,950	—
Total, New York	25,207,798	22,263,181	2,944,617
Bergen County ...	44,800	44,800	—
Essex County ...	2,869,640	2,709,640	160,000
Hudson County ...	4,245,032	2,551,232	1,693,800
Middlesex County ...	34,000	34,000	—
Passaic County ...	101,000	101,000	—
Union County ...	1,171,144	1,171,144	—
Total, New Jersey ...	8,465,616	6,611,816	1,853,800
Grand Total ...	33,673,414	28,874,997	4,798,417

(Continued on page 254.)

Port of Southampton Topics

Contract Placed for Construction of New Graving Dock.

GREAT progress has been made on the preliminary work in connection with the world's largest graving dock, which is to be built at Millbrook, Southampton, and the Southern Railway Company have now placed the contract for its construction.

The work, which will have to be undertaken expeditiously if the dock is to be ready to receive the new 73,000 tons Cunarder in September, 1933, has been entrusted to Messrs. John Mowlem and Co., Ltd., of London, who will commence operations in the near future in conjunction with Messrs. Edmund Nuttall and Co., Ltd., of Trafford Park, Manchester. The idea of the two firms co-operating is to expedite the work in view of the limited time at their disposal.

The graving dock, when completed, will be 1,200-ft. in length, 135-ft. wide at entrance, and will have a depth of 45-ft. to the top of the blocks at high water neap tides.

Up to the present the energies of the Southern Railway Company and the James Dredging, Towage and Transport Co., Ltd., have been directed on the construction of an enclosing bank around the area where the graving dock is to be built. This, when completed, will enable the excavation to be carried out with greater facility, for the mudland cut off from the Test by the bank will then be kept more or less dry by pumping.

Two distinct methods are being used in the process of making the bank. In the first place, trainloads of chalk are arriving at Southampton daily, and are being tipped where required, whilst gravel from the river bed is also being deposited.

It will be necessary to excavate to 87-ft. below the quay level—the top of the graving dock walls—and that will involve the lifting of over 1,000,000 yards of material, equal to about 1,250,000 tons.

In all probability the excavation will be carried out by means of steam navvies and in timbered trenches, but such details have not yet been settled. As soon as the excavations at one end of the dock have been completed, however, it will be possible to commence concreting at that end, so that for a time the two processes will proceed simultaneously.

The work of completing this great graving dock by the autumn of 1933, when it will be required to receive the 73,000 tons Cunarder upon her delivery from Messrs. John Brown and Co., Ltd., is a mighty undertaking. To accomplish the task by the appointed time the engineers and men employed will have to toil unceasingly. The leading officials have staked their reputation upon getting the job finished in under 2½ years, and unless unforeseen difficulties occur they will succeed.

The dimensions of the graving dock will make it the greatest dock of its type in any part of the world, and as the 60,000-ton floating dock is also a record-holder, Southampton will have both the largest graving and floating dock.

The length of the new Cunarder will be 1,018-ft., and her beam 115-ft., so that the dock will be in excess of the vessel's requirements, and capable of accommodating even bigger liners should they ever be built.

The new dock will be the same length as the graving dock of the U.S. Navy Department at Boston, U.S.A., but the width of entrance will be 15-ft. greater. At present the largest graving dock in the United Kingdom is the Gladstone Dock at Liverpool. That is 1,050.4-ft. in length and 120-ft. wide, with a depth of water over the cill of 43.5-ft. at ordinary spring tides.

In order that the big ships may enter the graving dock to be constructed at Millbrook, it will be necessary to dredge an approach channel to a depth of 35-ft. l.w.o.s.t. The firm material gained in that process will not be wasted, but utilised for reclamation purposes in connection with the docks extension scheme.

The graving dock is being proceeded with on an undertaking by the Government to render financial assistance under the Development (Loans, Guarantees and Grants) Act, 1929.

Records Established in Work on Docks Extension.

In the great efforts being made to push ahead the docks extension works on the Western Shore, Southampton, records have been established in two directions. One is that in dredging 500,000 cubic yards of green sand and boulders, equal to 750,000 tons, have been lifted in a month, and the other is in the driving of steel sheet piling, with which the area of the graving dock is to be enclosed.

Since the dredging was started in 1927, something like 15,000,000 tons of spoil have been lifted from the bed of the River Test. Sixty vessels of the James Company's dredging fleet have been engaged on the task, and their reclamation dredger-hopper is pumping ashore 50,000 tons of dredged material every week.

Not only in the dredging is the work proceeding at a great pace, but in the construction of the quay wall remarkable progress is being made. Of the 78 concrete monoliths provided under the first section of the scheme, 69 have now reached their final depth, and the remaining nine are little short of it.

The taking in hand of the second stage of the extension and the graving dock means that work is now in progress along the whole line of " front " from the Royal Pier to Millbrook Point.

Southampton Harbour Board Consider Improvements in Approach to Southampton.

All shipping interests at Southampton were represented at a conference called by the Southampton Harbour Board on May 19th to consider what further steps can be taken or recommended to render the aids to navigation and approaches to Southampton more complete.

The conference was called following the recent grounding of the " Mauretania," " Berengaria " and " Statendam " when approaching Southampton. There was a full and frank discussion concerning possible improvements in the areas both inside and outside the waters over which the Harbour Board have jurisdiction.

Alderman S. G. Kimber, Chairman of the Harbour Board Sub-Committee dealing with the matter, told the conference that the Board of Trade had written to the Harbour Board asking to be favoured with observations on the improvement of the port approaches.

Mr. J. H. A. Smith, hon. secretary of the Outward Pilots, said that the pilots had no great criticism to offer with regard to dredging. What they were concerned with at the present moment was the Fawley light and fog signal. They wanted fog signals on, or near, Fawley beacon, and the beacon modernised and made a more distinctive light.

The provision of a direction finder and fog horn at the Nab Tower was urged by Mr. L. I. M. Bigby, and Mr. W. A. Penton (Union Castle Line) suggested that a distinctive light should be placed at Hurst Castle.

The Harbour Board will in due course make a report to the Board of Trade.

" Empress of Britain " at Southampton.

The presence at Southampton of Great Britain's newest wonder-ship, the " Empress of Britain," has been the event of the month in Dockland. The vessel, which is of 42,500 tons, and was launched by the Prince of Wales at Clydebank in June last year, spent several weeks at Southampton before leaving on her maiden voyage to Quebec on May 27th. During that time the Canadian Pacific Company have, to a large extent, thrown her open to general inspection, and among those who have visited the liner is Prince George.

Speaking at a luncheon on board, Sir George McLaren Brown, European General Manager of the Canadian Pacific Railway Company, said that the " Empress of Britain " was the most up-to-date example of British engineering skill and ingenuity. The liner's great speed will enable passengers to reach New York, Boston, Philadelphia and Washington in five-and-a-half days, and points farther west in even shorter time than in travelling from Southampton to New York direct in the speediest vessel afloat. She would also enable a new record to be established in travel to the Far East, for, working in conjunction with the " Empress of Japan," which was placed in commission last year and which had cut down the Pacific Ocean crossing by three days, a passenger could breakfast in London and lunch in Yokohama 17 days afterwards.

Developing Cargo Traffic at Southampton.

The efforts being made to develop the cargo traffic of Southampton are meeting with success. Up to the present there have been certain stumbling blocks in the way, for apart from the fact that Southampton has not been in a position to offer definite berths for cargo vessels which might desire to make this their terminal port, the density of the population in the immediate vicinity has not been sufficient to persuade shipowners to change their plans, and incidentally the ports which they have been in the habit of using.

There is little doubt, however, that when the berths to be furnished by the new docks become available, or alternatively when some of those in the existing dock estate can be allocated for cargo, the freight traffic throughout the port will quickly expand.

Meanwhile industry is showing an increasing tendency to come South, and with it the population in and around Southampton is becoming perceptibly denser.

At first glance the monthly cargo returns do not arouse enthusiastic hopes in respect to Southampton Docks. In reality the situation is far brighter than appears on the surface. Viewed in the light of the depression throughout the country and

Port of Southampton Topics—continued

throughout the world, it is to be doubted whether any port can show better results in comparison with the traffic they were receiving before the slump set in. The increase in inward cargo is highly satisfactory and shows every indication of continuing, whilst the decline in outward freight is not limited to Southampton, but is being experienced by every port in the country.

Since the commencement of the year two developments have materially assisted in regard to the imports at Southampton. The first was the decision of the Union Castle Line to send their intermediate vessels into the port on their homeward voyages from the Cape, and the second was the advent of numerous steamers of the Anchor Brocklebank Fleet. The move on the part of the former company has resulted in a very considerable advance in the fruit trade with South Africa, at least as far as Southampton is concerned; whilst at the moment large cargoes of wool, hides, skins and mohair are arriving weekly. These are over and above the quantities which arrive each Monday in the mail and passenger vessels.

With regard to the Anchor Brocklebank steamers, they have been calling here since just before Christmas, and have brought quite sizeable shipments of tobacco as well as other general cargo. This traffic has now ceased for the time being, as the season is temporarily at an end, but it is confidently expected that the service will be resumed in the autumn.

Another development was the arrival of the steamer "Miami"—an association between Southampton and the firm of Messrs. Elders and Fyffes, Ltd. This company carries the bulk of the bananas shipped to England, and whilst at the moment it is apparently not the intention of the company either to discharge or to ship cargo here, it is confidently expected that developments along these lines will transpire at a future date. Should this take place, the trade will be a most valuable one.

It may also be mentioned that when the Southern Railway Company are in a position to offer definite berthing accommodation for cargo vessels, the craft of at least one large and important organisation will make regular calls at the port.

All-round Decreases in April Figures.

It is rarely that many decreases are recorded in the statistics published by the Southern Railway Company in respect to Southampton Docks, but the figures for the month of April provide an exception. Indeed, under the eleven headings it is possible to discover only one increase, and, strangely enough, that is in inward cargo, a commodity which Southampton has received in all too small quantities in the past.

It has long been the desire of the Southern Railway to increase Southampton's reputation as a cargo centre, and it is a striking thing that, for the past three months, an increase in imports should have been recorded, when the returns of other ports are, generally speaking, down, in comparison with recent years.

The number of vessels inward dropped from 285 to 271, and outward from 288 to 269; while the gross tonnage slumped from 1,540,872 inward in April, 1930, to 1,442,856 last month, and from 1,546,498 outward to 1,429,497. There was, therefore, a decrease in the former instance of 98,016 tons, and in the latter of 117,001 tons.

The net tonnage returns also show a decline, for inward the figure fell from 826,322 to 754,624, and outward from 832,549 to 751,739, the respective decreases being 71,698 inward and 80,810 outward.

Inward cargo, already mentioned, rose from 40,160 tons to 42,287 tons, a jump of 2,127 tons, but that advance was counterbalanced by an outward fall of 6,469 tons. That return is, however, merely a reflex of the depressed state of industry, and doubtless, when a return to more prosperous times occurs, the deficits will again be increased.

With regard to passenger traffic, in which Southampton is supreme, there was a substantial decrease. The decline of 1,689 inward and 4,932 outward reveals in striking manner the effect of business depression in America upon travel. The number of passengers inward dropped from 18,791 to 17,102, and outward the total slipped back from 19,032 to 14,100.

Irish Harbour Matters

Dublin.

Dublin Port Dues Reduced.

THE Dublin Port and Docks Board, on the 30th April, passed a resolution reducing port dues as follows:—On foreign vessels, from 10¼d. to 9¾d. per ton; on cross-channel and coastwise vessels, from 6½d. to 5½d. per ton. Goods imported, subject to a reduction of 5 per cent.; goods exported, subject to a reduction of 10 per cent. The estimated saving to payers of dues was £16,000 per annum.

In the following cases, half tonnage rates will be charged:—

Any vessel entering the port for the purpose of landing or embarking passengers and their personal luggage and/or mails only, and not loading or discharging cargo, providing such vessels do not remain in port for more than 24 consecutive hours.

Any ship entering the port from an overseas port, with cargo for Dublin, and landing or embarking passengers or mails, and discharging only such amount of cargo as is less than one half of the registered tonnage of such vessel.

Any ship entering the port on an excursion trip only, and not remaining within the port for more than seven consecutive hours during the trip.

Any ship entering the port through the stress of weather or for repairs, or to use the graving dock or slips, or for a supply of coal or stores for the ship's consumption only, and not discharging or loading cargo or landing or embarking passengers.

In the latter case also the total or partial unloading of cargo in connection with the repair of a ship must not be deemed a discharge of cargo if the cargo so discharged is afterwards re-loaded into the same vessel.

These charges came into operation on the 1st June, 1931.

Personal.

Mr. Norman H. Wallace has been unanimously elected a member of the Dublin Port and Docks Board in place of the late Mr. A. Nicholl.

Cork.

Haulbowline as an Oil Depot.

In Haulbowline Dockyard, Cobh, Co. Cork, there are four great oil reservoirs which should make it an admirable centre for oil storage in the Irish Free State. In the opinion of Mr. Richard Wallace, Chairman of the Cork Harbour Commissioners, there is no better oil distributing centre, not only for the Irish Free State, but for the West Coast of England and Wales.

Haulbowline was formerly the property of the British Admiralty. It now belongs to the Irish Free State, and would afford a safe discharging place for oil tankers. The four great oil reservoirs built by the British Government are reported to be in first-class condition, and if necessary others can be built. Haulbowline Island would afford safe oil storage as in the event of fire and explosion it is well away from dwellings.

If Haulbowline is used, long delays in port, due to the necessity for discharging into small oil tankers, would be done away with. Large ocean-going oil tankers can discharge into tanks at Haulbowline, and smaller coastal-going tankers can fill from these tanks.

At present the only oil receiving depots in the Free State are at Foynes, at the mouth of the Shannon, and at Dublin. Haulbowline is claimed to be superior to both, and more on the trade route.

Mr. Wallace says that, to encourage oil companies to establish oil depots at Haulbowline, the Cork Harbour Commissioners have decided to reduce dues on large oil tankers there to one-fifth of what they were. They have decided not to charge any dues on the coastal oil tankers which will call at the island to load oil for distribution to other ports.

Oil Tanks Leased.

Following Mr. Wallace's speech, the Irish Free State authorities have leased the Haulbowline oil tanks and 120 men have been for some time clearing and preparing them for use.

The Norwegian oil tanker "Drafn," 7,700 tons gross, arrived from the Russian port of Tuapse and discharged 5,800 tons of petrol before resuming her voyage to Avonmouth. The British oil tanker "Oilshipper," 5,525 tons gross, has completed the discharge of 8,000 tons of benzine. The coasting tanker "Rusoilprod" arrived for a cargo of oil for Preston, Lancashire.

Reduced Dues for Congress Liners.

Cork Harbour Commissioners have adopted a recommendation of the Law and Finance Committee to charge no tonnage dues other than one farthing per registered ton on trans-Atlantic liners specially chartered to bring passengers to Cork

Irish Harbour Matters—continued.

port in connection with the Eucharistic Congress in Dublin in 1932. This concession will last for 14 days from the arrival of the vessel, and like privileges will be extended to any trans-Atlantic vessel using an Irish port for a like purpose and entering or leaving Cork port to disembark or re-embark passengers.

Mr. R. Wallace, the Chairman, explained that a vessel going from Cork Harbour to Dublin and returning would only have to pay one farthing per registered ton, which was a magnanimous concession.

Mr. Harman said there would be no dues charged to vessels lying at anchor in Dublin Bay, and he thought that Cork should be on the same footing.

Miscellaneous

Waterford Port Prospers.

Notwithstanding the reduction in harbour dues some 14 months ago, Mr. A. A. Farrell, Secretary and General Manager of Waterford Harbour Commissioners, reports an increase in revenue from ships and cargoes amounting approximately to £2,000.

At the annual general meeting of the Commissioners, Mr. Mathew Cassin, outgoing Chairman, and Mr. D. V. A. Spencer, outgoing Vice-Chairman, were re-elected for the ensuing year.

Dundalk Doing Well.

At the annual meeting of the Dundalk Harbour Commissioners, Mr. Wm. Twihill stated that 1930 was the best year in the history of the port.

The auditor of the Free State Ministry of Industry and Commerce, in his report showed that income for the year exceeded expenditure by £1,861. Cargo and port dues increased from £9,729 to £10,234, but the increase was counteracted by reductions in receipts from dividends, and from the Dundalk and Newry Steampacket Co.

In moving the adoption of the report, Mr. Twihill said that their coal imports for the year totalled more than 148,000 tons, which was the largest in any one year within his recollection. This increase was due to the facilities now provided by the harbour, owing to the reconstruction of the quays and the provision of equipment for the rapid handling and despatch of steamers.

They hoped, with these facilities, to do an even bigger import trade in future. They now had a long line of splendid quays with modern equipment. The Board also had entered into contracts which would greatly increase the revenue in future years. He voted thanks to the staff for the able manner in which they had done their duties during the previous year.

Mr. Twihill was re-elected Chairman for the twelfth time, and Mr. T. F. McGahan was re-elected Vice-Chairman.

Ballycastle Harbour, County Antrim.

At a meeting of the Antrim County Council, it was announced by Mr. Robert Crawford, M.P., that the Northern Ireland Ministry of Commerce has agreed to maintain Ballycastle Harbour for three years.

The Finance and Law Committee recommended that a resolution to borrow a sum of £7,000 for the Council's proportion of the erection of Ballycastle Harbour, to be repaid in ten years, be rescinded, and that the loan be obtained from the Northern Ministry of Finance, repayment to be spread over a period of fifty years, or such period as may be agreed to by the Ministry of Home Affairs.

The report was adopted.

Limerick Dock Extension.

At a special meeting of the Limerick Corporation, the Mayor presiding, it was decided by a majority to offer the Harbour Board twenty acres of the land of Corkanree for £1,250 for the purpose of extending the dock basin. A motion to refer the matter to arbitration was defeated.

It was complained at the meeting that the attitude taken up by some members of the Corporation would, if adopted, have the effect of holding up the project, as the price they were asking for what was described as slob land, £250 an acre, was exorbitant.

Belfast.

Belfast Port Affairs.

The Belfast Harbour Board has just issued the official return giving statistics of the goods dealt with at the port during the first quarter of the present year. The report contains many illuminating figures, some of them gratifying and others indicating that the prolonged period of depression has not yet come to an end.

The main industry of Ulster is, of course, agriculture, and the following statistics will give one an idea of how it stands. Only 28 tons of butter were exported during this period, as compared with sixty-four tons last year, and 2,181 tons were imported, an increase of 1,019 over 1930.

The exports of cattle fell from 25,395 head to 16,266. Eggs, however, give more scope for optimism, as the exports have risen by well over a thousand tons. Fowl also show an encouraging increase in exports of nearly two hundred tons, but these two increases are rather counterbalanced by a serious drop of over two thousand tons in the exports of hay.

On the other side the development of the pig end of the industry has been remarkable. No less than 8,259 animals were exported during the first three months compared with 4,479 in the corresponding period last year, while the export of potatoes rose from 10,509 tons a year ago to 24,494 tons during the first quarter of the present year.

Apples and pears present extraordinary figures, the export for 1931 quarter being 3,850 tons, while those for the same period of last year were only 58 tons.

In connection with the linen industry, the flax imports declined by 4,000 tons and the exports also came down from 376 to 135 tons. With regard to linen itself the exports were down over a thousand tons.

The shipbuilding figures reflect the slack state of the industry, only 3,279 tons of iron and steel castings being imported, as compared with 5,125 last year. Wrought and bar iron imports have dropped some seven thousand tons, and plate iron has dropped by twelve thousand tons. Only one ton of nautical instruments was imported, as compared with four last year.

On the imports side it is evident that builders' providers have increased their demands, this year's cement cargo totalling 9,646 tons, as against 9,263 tons last year, but there was a heavy drop in deals—from 4,963 loads to 1,601. Coal went down from 352,549 tons to 336,995. Other increases were:—confectionery, 1,868 to 2,099 tons; feeding meal, 4,902 to 6,066 tons; flour, 15,200 to 15,854 tons; hardware, 1,906 to 1,930 tons; maize, 75,519 to 78,162 tons; artificial manures, 701 to 1,706 tons.

At a meeting of the Belfast Harbour Board on the 5th May, Mr. R. E. Herdman, D.L., presiding, the Harbourmaster reported that 259 vessels had arrived at the port during the period from 19th April to the 2nd May, as follows:—Coastwise and cross-Channel, 241; Foreign, 16; Non-trading, 2.

The total tonnage of vessels which arrived from 1st January to 2nd May was:—Coastwise and cross-Channel, 911,792, an increase of 30,966 over the corresponding period of 1930; foreign, 232,820, an increase of 33,841; non-trading, 23,015, a decrease of 20,677. Total of 1,167,627, an increase of 44,130.

The Port of New Orleans

The business of the port of New Orleans during the month of April showed the same marked and substantial improvement that has characterized each previous month of the current year. In fact the increase shown during April greatly exceeds that shown by any previous month.

This seems to indicate a definite and permanent revival in the port's business, and the general prosperity of this city is so largely dependent upon the successful operation of the port facilities that this has doubtless resulted in the improvement of business generally.

According to figures compiled by the Dock Board almost every commodity moving over the wharves showed an increase over the previous month. Among the imports non-metallic minerals increased 45,262 tons; chemicals increased 34,633 tons; wood and paper products showed an increase of 10,392 tons; vegetable food products increased 7,286 tons, and other vegetable products 8,942 tons; textiles increased 6,127 tons, and all other imports showed large increases. Exports, too, showed splendid increases. Wood and paper products exported showed an increase of 14,837 tons. Non-metallic minerals exported increased 13,374 tons, and chemicals and textiles exported showed increases of 6,213 tons and 4,185 tons respectively. All other commodities exported, with few exceptions, showed splendid increases.

The Inner Harbour Navigation Canal continues to show great activity and increasing utilization. During April, 1,099 vessels with a total tonnage of 393,136 tons used the Canal. This was an increase of 202 vessels and 94,875 tons over the same month of the previous year.

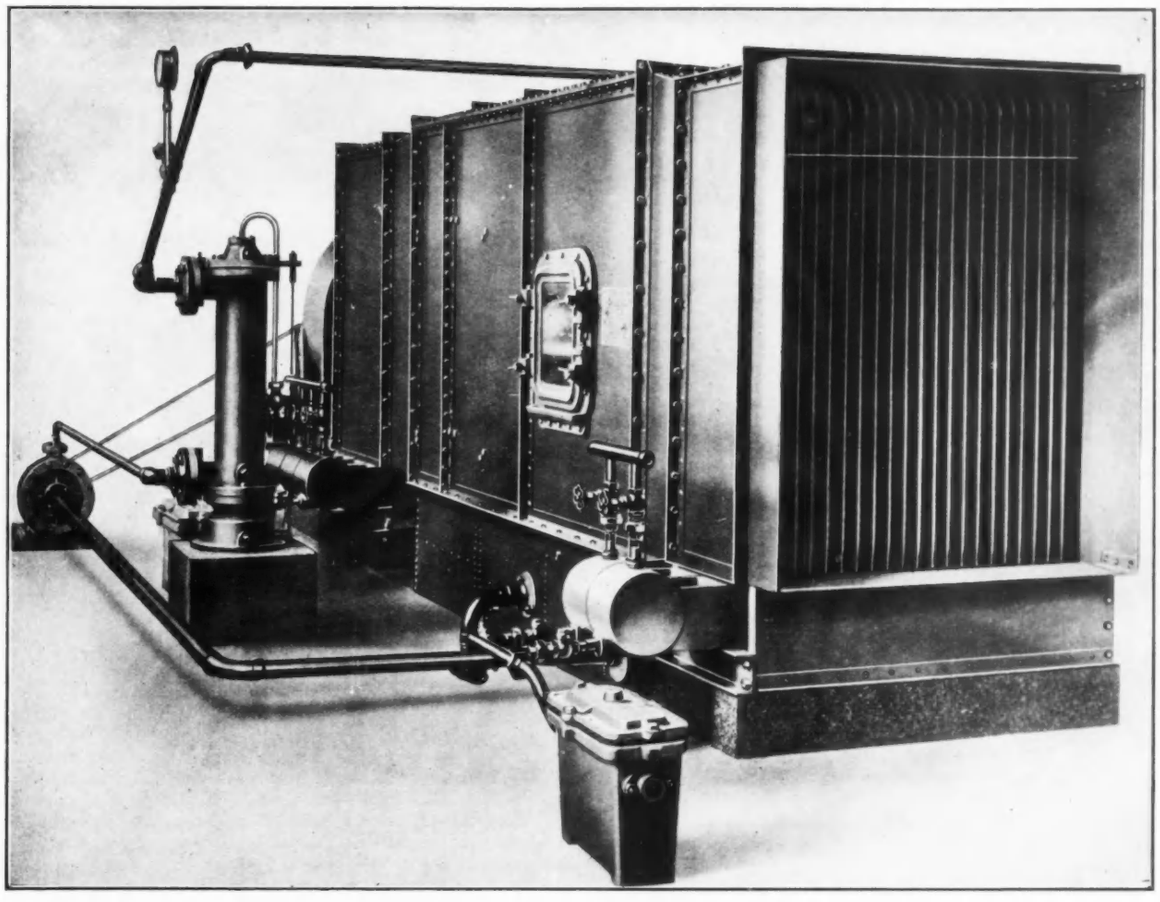
Inland water craft of over 25 tons arriving during the month had a total tonnage of 138,875 tons. This was an increase of 27,481 tons over April, 1930.

Sea-going vessels arriving during April numbered 225 and departures numbered the same.

The sea-going vessels arriving had a gross tonnage of 960,954 tons. This was a decrease as compared with April, 1930, but represented an increase of 72,345 tons over the previous month of the current year. The gross tonnage of vessels using the public wharves was 742,688 tons.

During April, 1931, 1,724,998 bunches of bananas were imported.

Air Conditioning: Some Details of an Important New Plant



Latest Design of "Sirocco" Air Conditioning Plant, with preliminary air heater, air spray washer, main air heater, electric-driven fan, automatic control gear, including two thermostats and all accessories, made in standard sizes, 4,000 to 60,000 cubic feet of air per minute.

THE value of the accurate control of the temperature, humidity and purity of the atmosphere is of considerable importance in connection with the operation of dock buildings, and storage generally, as well as in very many industrial operations and the running of hotels, hydros, blocks of offices, theatres, cinemas, and similar establishments.

Great interest attaches therefore to a new self-contained air conditioning plant which was shown for the first time by Davidson and Co., Ltd., of Belfast, at the recent British Industries Fair, Birmingham. The firm have, of course, specialised in ventilation, air conditioning and purification, and fan work of every description for many years past, both afloat and ashore, and the new plant is the result of an extensive experience in most countries of the world. Essentially the complete unit, in the form of a horizontal rectangular casing, embodies a preliminary air heater, spray water heater, air washer, main air heater, and electric driven fan, with automatic control gear and all necessary accessories, forming a neat and compact arrangement made in standard sizes from 4,000 to 60,000 cubic feet of air per minute capacity. The object is to provide as conveniently and efficiently as possible, in any type of building, an atmosphere practically free from dust, dirt, odour and obnoxious gases and which has any desired temperature and moisture content. The preliminary air heater (steam being used throughout as the heating medium), raises the temperature of the air to any pre-determined figure while the air washer is a water spray chamber with stainless water automisers and a centrifugal pump in the circuit operating at 20 lbs. per sq. in. pressure, which cleans the air thoroughly and can also completely saturate it with moisture. Included in the equipment at this stage is an automatic thermostatic regulator which maintains accurately the required temperature in the air by altering, as required by means of a diaphragm device, the steam supply to the water heater. Also the washer chamber is on the scrubber and eliminator plate principle with a large number of parallel galvanised steel plates fixed vertically close together so that all free moisture in the air current is eliminated completely. Then on leaving the washer chamber the moisture saturated cleaned air is reheated by the main steam heater to a higher pre-determined temperature so as to give automatically the desired humidity, this final temperature also being automatically regulated by a second thermostatic device, the use of two separate heaters in this way allowing of sensitive temperature control with less than 1 degree variation. Further, there is included at the end of the rectangular casing an electric driven fan for the air circulation, as well as a small air compressor, the automatic operation of the valves and regulators being carried out by compressed air. A complete instrument panel is also provided which shows at a glance not only the temperature and humidity of the atmosphere in the building but also those of the air as actually being discharged by the fan.

On these lines any desired atmosphere is obtained from completely dry to the highest moisture content the water being added to or taken from the air just as required with the water spray operated at any temperature for heating or cooling while if necessary complete refrigerating plant can be supplied to work in conjunction with the air conditioning to cool the spray water.

"Dues and Port Charges on Shipping throughout the World."

Messrs. George Philip and Son, Ltd., of 32, Fleet Street, London, E.C.4, have just issued the nineteenth edition (1930) of dues and port charges on shipping throughout the world. These are issued in 4 volumes at £5 net the set.

Volume 1 is devoted to Europe; Volume 2—Africa, Asia and Australasia; Volume 3—North and South America, including the West Indies; and Volume 4 to the British Isles.

The information contained in these volumes is very extensive and, amongst other features, information is given on coaling and oiling facilities, stevedoring rates, port charges, and a new feature which has been introduced is inclusive rates showing charges incurred by merchants or importers as distinct from shipowners such as storage and removal. The canal system of Europe has also been fully dealt with and the complete set has been thoroughly revised and greatly enlarged.

The publishers are to be congratulated on the thorough way in which these works have been produced.

Jugoslavian and Near Eastern Port Matters.

ACCORDING to statistics which have just been published by the Jugoslav Government, total shipping at Jugoslav ports during the whole twelve months of 1930 included the following items:—

	Imports Tons	Exports Tons	Total Tons
1930	506,000	2,250,500	2,756,500
1929	419,500	1,453,500	1,873,000
	+86,500	+797,000	+883,500

If it is considered that the whole Jugoslav shipping is distributed between Sussak, Sibenik, Metkovich, Split, Dubrovnik, Cattaro, etc., it will be seen that there is no important port in the true sense of the word, and the whole trade of the country is distributed among small shipping centres and not concentrated in a large harbour such as is the case for Greek shipping in Pireaus, and for Turkish shipping at Istambul, etc. As a matter of fact the whole Jugoslav shipping does not reach even one-third of the total shipping of Greece. If it is considered that Greece has about 6,000,000 inhabitants while Jugoslavia has about 12,000,000 inhabitants, it is easy to get an idea of the importance of shipping in this country. However the Belgrade Government is making every effort to increase trade through Jugoslav ports, and the agreement between Jugoslavia, Czechoslovakia, Roumania, etc., in regard to reduced railway freight rates for shipments through Jugoslav ports has just been put into effect, while in view of the fact that facilities in the port of Sussak (the former Baross Dock of the port of Fiume) have proved to be unsatisfactory and that congestion has been experienced in 1929-30, Sussak has been connected by rail to the port of Bakar and to the bay of Martinschizza east of the port of Fiume. General bonded stores will be built according to the Jugoslav programme in the port of Sussak, and a portion thereof is to be created a "free port."

It is interesting to note the development of shipping at Sussak, which is the main port of Northern Jugoslavia, and this is shown in the following figures:—

	Imports Tons	Exports Tons	Total Tons
1924	94,491	82,696	177,187
1925	176,716	163,421	340,137
1926	133,216	137,537	270,753
1927	228,647	209,438	438,085
1928	249,185	293,540	542,725
1929	317,835	376,074	693,909
1930	295,000	423,000	718,000

When it is considered that Sussak does not even possess 1,500 metres of quayage it is evident that trade is about 500 tons yearly on each metre of quayage. The fact that shipping at Sussak has shown an increasing tendency, in spite of the fact that the connections between Dalmatian ports and Serbia have been improved by rail, clearly shows that there is no competition between Middle and Northern Adriatic ports.

The conclusion of the Jugoslav-Spanish Treaty of Commerce has proved influential regarding the exports from the port of Sussak, but the Jugoslav timber trade, on which the development of foreign trade is based, has been greatly influenced during the last months of 1930 by the large quantities of lumber which have been placed on the Mediterranean markets by the Russian Soviet, and there is no doubt that figures for the first quarters of 1931 will show a decrease. Jugoslav steamship services from Sussak have been greatly increased.

The construction of the port of Durazio (Albania) has made considerable progress, and Messrs. Majorana and Co., to whom the work has been entrusted, expect to reach the completion by the end of 1932, when the port will have available about 2,000 metres of quayage and a depth of water of 15 metres.

In connection with the development of the port of Salonica, the Société Française G. Ersent had been requested to prepare a scheme for harbour enlargements there. Some weeks ago the S.A. G. Ersent submitted to the Salonica Harbour Administration several projects for enlargement. The attention of the Harbour Board has been attracted to the two projects, which involve the construction of a new dock west from the present port of Salonica, and include four piers about 500 metres long closed by a breakwater of several thousand metres. Both west and east from the four piers two small docks would be built for the use of special trades. As a matter of fact it should be considered that the space where the new piers would be built is at present occupied by oil tanks, and it is evident that the pipe lines which connect these tanks will have to be arranged somewhow, in order to enable steamers to continue to unload oil or gasolene directly into tanks. Nothing is known about the decision of the Salonica Harbour Board in connection with these projects, since it is certain that a tender will have to be made before assigning the works, as is usually done in these cases.

The Greek Free Zone Administration has just published statistics concerning shipping at Salonica during the whole of 1930, and they are as follows:—

SHIPS CALLING AT SALONICA DURING 1930 AND 1929.

	1930		1929	
	No.	N.R.T.	No.	N.R.T.
Greek	994	509,058	913	470,936
Italian	208	372,897	202	356,409
British	129	240,451	130	231,939
American	61	190,298	49	142,660
German	58	95,331	60	91,706
Dutch	37	51,714	40	53,140
French	12	39,780	18	57,847
Russian	26	30,248	22	28,275
Norwegian ...	21	27,670	19	19,515
Jugoslav	27	26,585	53	46,572
Swedish	17	17,972	10	11,914
Turkish	9	8,142	8	6,772
Roumanian ...	12	4,200	9	4,776
Egyptian	1	1,332	—	—
Persian	1	473	2	566
Bulgarian	—	—	5	5,154
Japanese	—	—	3	13,593
Finnish	—	—	1	494
Belgian	—	—	1	1,179
	1,613	1,616,151	1,545	1,543,447

The calling of ships at Salonica has shown an increase, while the imports of goods by sea from foreign countries reached 425,424 tons in 1930, against 487,624 tons in 1929, 454,574 tons in 1928, and 423,155 tons in 1927. Exports by sea to foreign countries have shown a decrease from about 57,000 tons in 1929 to 30,000 tons in 1930. According to reports from Greece, Jugoslav trade has also shown a decrease. The depression is due especially to depression in the building industry, as arrivals of building materials, iron, etc., have shown a decline. The Greek Free Zone is doing its best to attract transit trade through Salonica, and for this purpose efforts are being made to have steamers anchored alongside the quay as far as possible. Tonnage calling at Salonica has, as a matter of fact, considerably increased, but evidently ships do not find as much cargo as they used to. The share of the American Export Lines has been considerably increased owing to the heavy shipments of tobacco. Regarding this American progress, a decline can be noticed in the French share, which includes calls of the Fabre Line with their ships going to and from the United States of America to the Black Sea. However, there is no doubt that unless rates are cut down at Salonica and operations are facilitated in order to make calling at the port as cheap as possible, it can hardly be seen how the various lines will be able to maintain callings at Salonica with the decreasing inward and outward freights which are being offered there.

Dutch engineers have again visited the bay of Trabzon (Trebizonde) in order to make sure that it would not be possible to undertake the construction of a port there. The difficulty consists in the fact that the Turkish Government refuses to undertake reimbursements of any enterprises before 1935. However, in the meantime the Eregli Sirketi have undertaken on their own account the repairs of the port of Zunguldak, and for this purpose large shipments of cement have been purchased at Spit (Jugoslavia).

Supplementing previous reports in connection with the development of shipping at Istambul, the passenger trade in foreign ships during 1930 included 25,906 passengers, against 25,267 in 1929, 27,328 in 1928, 25,033 in 1927, 28,848 in 1926, 40,519 in 1925, and 26,079 in 1924. Pireaus and Marseilles have been the foreign ports which chiefly influenced Istambul passenger trade.

"Crushing and Grinding"

We are indebted to the publishers for sending us a copy of the new journal "Crushing and Grinding," a monthly journal published by The Electrical Press, Ltd., of Fisher Street, Southampton Row, London.

This journal is devoted to crushing and grinding processes and machinery for the trades, industries and professions connected therewith, including the grinding of ores and metals and colloidal grinding.

Important New Works at the Bute Docks, Cardiff

New Swingbridge over Bute West Dock Lock

New Swingbridge over Bute West Dock Lock, Cardiff.

THE Great Western Railway Company are to be congratulated on their enterprise in providing a new double-track swing-bridge, which has been built to carry railway and road traffic across the lock between the Bute West Dock and Basin, immediately inside the main entrance to Cardiff (Bute) Docks at the Docks end of Bute Road.

The bridge replaces the single track swing-bridge that has been in existence for many years, and will greatly facilitate the rail and troad traffic at a very busy part of the docks. This bridge and the swing-bridge opened in September, 1929, over the Bute East Outer Lock now form a modern and direct road to and from the Queen Alexandra Dock.

The new bridge, which is hydraulically operated, consists of two main built-up steel girders with steel cross girders and timber decking, the total length being 90-ft. 6-in., and the width over main girders 28-ft. 4-in. Between the girders there are two roadways each 8-ft. 5-in. wide, having a division between them on the centre line of the bridge 1-ft. 8-in. wide and footpaths 3-ft. 3-in. wide.

The hydraulic machinery is so arranged that the bridge is not supported on the lifting rams when it is being swung across the lock or ashore, so that if the hydraulic pressure fails it can be operated by means of ropes hauled by the lock capstans, and thereby cause no delays to ships waiting to pass through the lock. The weight of the moving part of the bridge is about 300 tons.

The single line of railway that existed on the old bridge connecting the east and west sides of the West Dock has been maintained on the northern half of the new bridge.

As the new bridge had to be built on the site of the old one, it was essential that the roadway and railway over the lock had to be closed for a time, but everything has been done to reduce this period to a minimum. With this object, the steelwork of the new bridge was put together in the makers' works and as far as possible rivetted up. It was then brought to the site in as large pieces as could travel, and re-assembled in a temporary position on the east side of the lock. In this connection it is interesting to note that both the main girders, each 85-ft. 2-in. long and 7-ft. deep and 1-ft. 8-in. wide, and weighing together 42 tons, were carried completely constructed on one railway vehicle, unloaded with a 25-ton steam crane, and placed in their correct positions for building the bridge on the temporary site.

Possession was taken of the old bridge on the 19th November last, and while the new bridge was being built alongside, the old one was removed and its foundations, which were not strong enough nor sufficiently wide for the new one, cut away. Suitable foundations behind the lock wall, together with the necessary pits for the lower part of the new bridge and its operating machinery, drains, etc., were built, and the new steelwork was rolled into position and lowered on to its pivot and rollers about the end of March.

While the bridge itself, main decking, permanent way, and top decking were being finished, the roads and railways on the approaches were taken in hand, this work being necessary by reason of the increased width of road required to make the roads leading to the bridge comparable with the width of the bridge, and because of the re-grading of the approaches necessitated by the greater depth from the surface of the bridge to the coping level of the lock.

The bridge, which has been built by the Horseley Bridge and Engineering Co., Ltd., to the design of the chief engineer of the Great Western Railway, is capable of carrying the heaviest loads that use either railways or roads.

The bridge was officially opened for traffic on Monday, the 18th May, 1931.

Weser River Shipping in April, 1931

Shipping conditions on the Weser in April, which has fairly favourable water levels during the first three months of the year, have deteriorated, especially on the Upper Weser. Here, due to the decrease of water, the average draft depth fell to 1.67 metres, compared with 2.20 metres in March. On the Middle Weser the average draft depth fell to 2.12 metres from 2.70 metres in March.

Goods traffic has again slightly decreased. April's traffic through the Bremen Weser Lock downstream was only 92,000 tons against 102,000 tons in March and 135,800 tons in April of the previous year; and upstream 24,400 tons, against 31,600 tons and 32,200 tons respectively. Of the goods traffic downstream potash salts and coal decreased in comparison with the past month by 11,900 tons and 8,000 tons respectively. On the other hand gravel and stones showed an increase of 8,800 tons. Upstream all traffic decreased. Coal and scrap shipments were absent.

In the first four months of the year a total of 480,300 tons in both directions was transported. That is 233,900 tons, equal to 33 per cent., less than in the same period of last year. Of this decrease 195,000 tons was in downstream traffic, in which, among others, gravel and stones decreased by 134,300 tons, coals by 41,700 tons and salt and potash by 16,400 tons. Upstream the decrease amounted to 48,900 tons.

The Port of New York

(Continued from page 247.)

New York State Barge Canal Terminals in Port of New York.

The volume of merchandise carried on the New York State Barge Canals during the calendar year 1930, amounted to 3,605,457 tons, of which 2,434,541 tons, or 67.5 per cent., was shipped to or from the Port of New York.

In order to further the prompt and economical handling of this great tonnage, the State of New York maintains eight Barge Canal Terminals in the Port of New York designed for the use of vessels loading and discharging canal freight. These terminals are situated in various parts of the harbour, one being on the Hudson River, four on the East River, and one each on Gowanus Bay, Harlem River, and Flushing Bay.

Most of these terminals are equipped with adequate transit sheds and cargo handling equipment. The terminals at Piers 5 and 6, East River, Manhattan, consists of two piers 570 and 576-ft. long, providing 2,292-ft. of berthing space. Pier 5 is an open wharf without transit sheds. Pier 6, however, is substantially equipped with a large transit shed as well as cargo handling facilities, consisting of two semi-portal electric cranes of 3 tons capacity; one electric cargo unloader; one electric tiering machine, and two electric straight-line cranes of 1½ tons capacity.

The terminal on Gowanus Bay consists of a pier 1,250-ft. long, about 2,000-ft. of bulkhead, a tie-up pier 700-ft. long, and includes a grain elevator of 2,000,000 bushels capacity. The pier is equipped with a substantial transit shed, and its cargo handling machinery includes two electric semi-portal cranes of 3 tons capacity with 45-ft. booms, a 10-ton electric locomotive crane, and 13 grain spouts connecting with the elevator. A large open storage area of approximately 15 acres is located back of the pier and bulkhead. A depth of 35-ft. mean low water is maintained at the pier, which is frequently used by deep-sea vessels.

The type of canal craft using these terminals range from a 200-ton barge to a 3,000-ton steel motorship. Of the 756 cargo vessels in use on the Barge Canal during the year 1930, 97 were not less than of 1,000 tons capacity. Use of the Barge Canal Terminals is not restricted to craft actually employed in canal traffic, but may be used, and are used extensively by harbour craft, and, in the case of the Gowanus terminal especially, by deep-sea vessels. The canal terminals in New York Harbour handled 718,242 tons of such cargo during the year 1930. Such use by vessels other than those engaged in canal traffic is, however, permitted only when it will not interfere with the prompt and convenient docking of vessels actually engaged in canal traffic.

During the seasons of navigation on the canal, vessels engaged in delivering or receiving freight shipped through the canals, or destined for shipment through the canals, are exempt from wharfage charges at the Barge Canal Terminals. Other craft using the terminals are subject to the schedule of rates prescribed by the Commissioner of Canals and Waterways. For steamers loading grain from the State elevator at the Gowanus terminal no wharfage charges are assessed.

The State Barge Canal Terminals in New York Harbour are an important adjunct to the facilities of the Port, not only in providing economical handling of goods shipped or destined to be shipped via the canal, but also in providing public wharfage.

Aden Port Trust.

The returns for the month of February, 1931, of shipping using the port are as follows:—

	No.	Tonnage.
Merchant Vessels over 200 tons ...	117	463,150
,, ,, under 200 tons ...	4	672
Government Vessels	6	8,049
Dhows	95	2,553
PERIM.		
Merchant Vessels over 200 tons ...	22	79,055

The number of merchant vessels over 200 tons that used the port in February, 1931, was 117, as compared with 125 in the corresponding month last year, and the total tonnage was 463,000, as compared with 511,000.

Excluding coal, salt, fuel oil, and military and naval stores and transhipment cargo, the total tonnage of imports in the month was 8,400, and of exports 4,500, as compared with 9,100 and 5,600 respectively for the corresponding month last year.

The total value of imports, excluding Government stores, was Rs.38,33,000, as compared with Rs.55,72,000 for February, 1930, and of exports Rs.26,21,000, as compared with Rs.47,44,000.

The total value of both imports and exports together was Rs.64,54,000, as compared with Rs.103,16,000 for the corresponding month last year.

Imports during the month were above those for February, 1930, in the case of hides (raw), seeds, piece goods (printed or dyed), twist and yarn, tobacco (unmanufactured and manufactured); and below in the case of coffee, grain (pulse and flour), gums and resins, hardware, skins (raw), sugar, piece goods (grey), piece goods (white), and treasure (private).

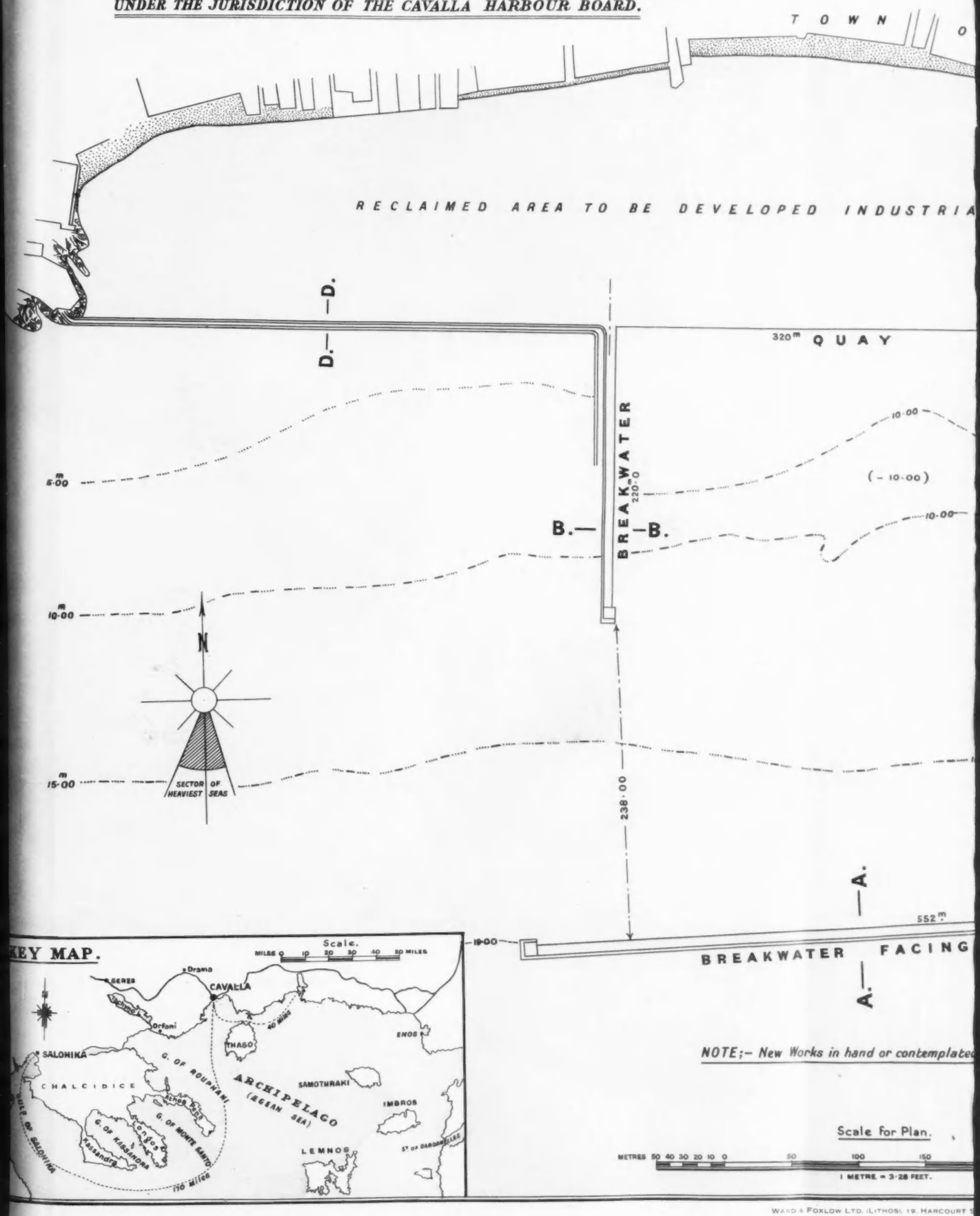
Exports were above those for February, 1930, in the case of hardware, hides (raw), piece goods (white), twist and yarn, and tobacco (manufactured); and below in the case of coffee, grain (pulse and flour), gums and resins, seeds, skins (raw), sugar, piece goods (grey), piece goods (printed or dyed), tobacco (unmanufactured), and treasure (private).

TRADE OF THE PORT.

Article.	Unit.	Imports.		Exports.	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal	Tons	1,500	40,244	0	0
Coffee	Cwts.	5,030	1,80,870	7,656	3,40,109
Grain, Pulse and Flour	,,	46,763	2,92,018	21,434	1,30,144
Gums and Resins	,,	2,841	69,397	3,103	71,086
Hardware	—	0	13,844	0	19,595
Hides, raw	No.	3,210	4,906	2,740	5,550
Oil, Fuel	Tons	26,178	7,85,340	0	0
,, Kerosene	Gls.	29,964	21,348	4,516	3,507
,, Petrol	,,	98,691	1,15,442	1,712	2,193
Salt	Tons	0	0	15,060	1,60,540
Seeds	Cwts.	4,234	42,764	680	8,236
Skins, raw	No.	117,941	95,038	240,980	2,48,755
Sugar	Cwts.	8,904	54,883	6,760	41,605
Textiles—					
Piece Goods, Grey	Yds.	3,115,366	5,20,752	2,808,980	4,57,008
,, ,, White	,,	452,749	98,983	206,820	50,269
,, ,, Printed or Dyed ..	,,	820,732	1,71,319	789,578	2,20,022
Twist and Yarn	Lbs.	292,260	1,64,594	295,738	1,71,428
Tobacco, Unmanufactured	,,	320,992	79,270	397,488	85,990
,, Manufactured	,,	27,888	33,082	41,468	47,714
Other Articles	No. of Pkges.	68,634	7,67,335	22,487	3,51,029
Treasure, Private	—	0	2,81,660	0	2,06,538
Total ...	—	—	38,33,089	—	26,21,318

PORT OF CAVALLA.

UNDER THE JURISDICTION OF THE CAVALLA HARBOUR BOARD.



NOTE:- New Works in hand or contemplated

Scale for Plan.

METRES 50 40 30 20 10 0 50 100 150

1 METRE = 3·28 FEET.

WARD & FOXLOW LTD. (LITHOS), 19, HARCOURT S

CK AND HARBOUR AUTHORITY, JUNE, 1931.

O W N O F C A V A L L A

D I N D U S T R I A L L Y

EXISTING PORT

(To be filled up)

QUAY

80 m

10·00

(- 10·00)

10·00

260 m

QUAY

400 m

C.

C.

RECLAMATION

15·00

A.

552 m

18·00

TER FACING WIND 655·2

A.

150

CUSTOM-HOUSE

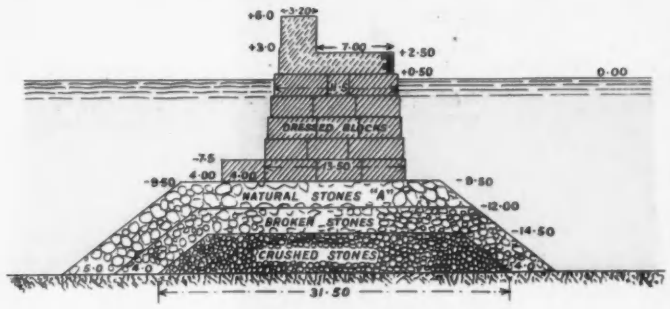
Cavalla Headland

rks in hand or contemplated coloured RED.

Scale for Plan.

100 150 200 250 300 METRES

1 METRE = 3·28 FEET.



CROSS SECTION A.A.

Scale for Section A.A.

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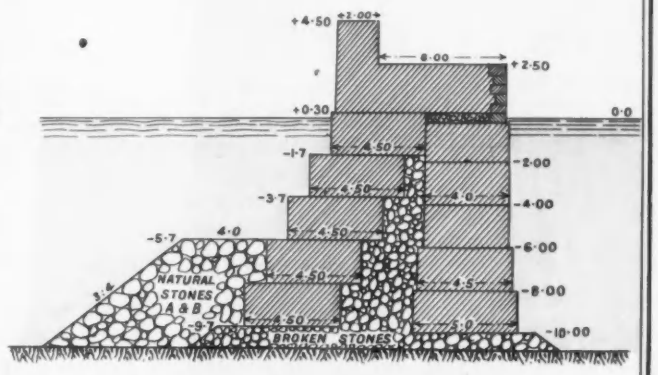

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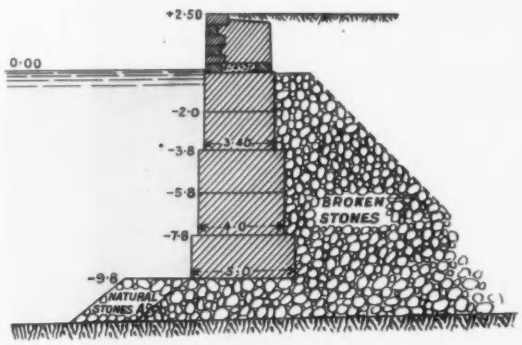
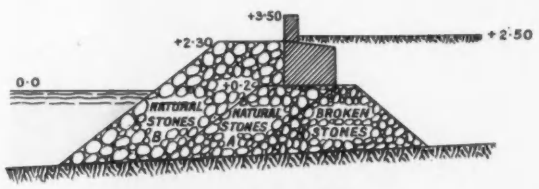


CROSS SECTION C.C.



CROSS SECTION D.D.

Scale for Sections B.B., C.C. & D.D.

METRES 5 4 3 2 1 0 5 10 15 METRES

FOXLOW LTD. (LITHOS). 19, HARCOURT STREET, W.1.